



nova scotia
agricultural
college

Science Applied to Life
One Hundredth Calendar
2005/2006

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The Nova Scotia Agricultural College reserves the right to make changes to this Calendar without notice.

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Message from the Registrar

At NSAC we have been educating students just like you for 100 years so we're especially proud to welcome you to our community of gifted scientists. Applied science is a fascinating and dynamic career choice. It means taking scientific principles and applying them to real-world problems. It's not just knowing the theories that order our natural world, but knowing how to apply them to make lives better.

This is what NSAC delivers to you. We give you an arsenal of skills and knowledge to make an immediate impact in the world around you. Where other people discuss solutions, you find and implement them. Where others discuss theories, you battle to apply them to help people in your community and around the world. Applied science is all about getting your hands dirty, having an idea and getting into the lab to test if it works. It's about doing something – something real and true and crucial. That's why we've packed our campus full of real-world researchers and are ranked in the top ten undergraduate universities in Canada in research dollars. These are the people who are finding new and innovative solutions to some of the world's most troubling problems – like water quality, health and reproduction, and protecting the food supply. Real scientists. Real science education.

Just as paramount is that NSAC delivers this type of preparation with the help of small class sizes. The average class has 12 students. That means instructors can better customize their teaching methods to your learning style. And if you require some extra help wrapping your head around a concept, you can get it. It also means more experience in the lab, not just watching but doing experiments, using test tubes, gas chromatographs and mass spectrometers.

Let's face it. University isn't just about books. It prepares you for the real world, and gives you coping skills, maturity and incisive analytical tools. We know this is true. Because we've been preparing students for the real world for 100 years. Finding order in our natural world, finding solutions for our food supply, animal and human health, our environment—how much more real can you get?

Welcome to the NSAC. Now roll up your sleeves and dig in because science is much too exciting to watch from the sidelines!

Wayne Paquet
Registrar

Mission Statement

The Nova Scotia Agricultural College excels in education and the provision of new knowledge in agriculture, food, and the environment for the benefit of society.

Statement of Values

In support of their mission, the faculty and staff of the College espouse the following values:

Excellence

We seek to achieve excellence in all we do. Our evaluation of ourselves and our students should reflect this high standard. We seek continuous improvement in our teaching, research and

service and expect from our students, faculty and staff a dedication and commitment to these pursuits.

Leadership

We provide leadership in the pursuit of truth, innovation, and solutions to problems encountered by the agriculture and food industry and rural communities. We seek to provide our students with opportunities to develop leadership skills, wisdom, and independence.

Cooperation

We seek cooperation and partnership with industry representatives, government agencies, and other universities and colleges in Canada and around the world.

Accessibility

We strive to make our programs accessible to all.

Community

We are responsible for ensuring a safe, healthy, motivating environment for the entire College community. We also have a commitment to the wider human community to act with equity, charity, and responsibility both as an institution and as individuals comprising the institution.

Accountability

We cherish the ideals of academic freedom and individual rights while recognizing the importance of personal and professional integrity and accountability for our actions. We operate in a fiscally responsible manner with all funding groups.

Environmental Responsibility

We seek to act respectfully and responsibly towards the environment and to provide leadership in soil and water conservation.

Respect and Fairness

We are dedicated to our students and to their pursuit of skills and knowledge. We respect all persons without prejudice or discrimination. We respect the opinions of others and encourage open debate. We strive to deal fairly with all people.

2005/2006 Schedule of Dates

July 28, 2005	Open House
September 6, 2005	Student Services Orientation
September 7, 2005	Fall Registration and Academic Orientation
September 8, 2005	Classes Begin
September 21, 2005	Last day to register for a course – Fall semester
October 10, 2005	Thanksgiving – No classes
October 21, 2005	Last day to drop a course without academic penalty
October 21, 2005	College Royal – No Classes in afternoon
October 22, 2005	Homecoming/Reunion Weekend
October 27, 2005	Autumn Assembly
November 11, 2005	Remembrance Day – No Classes
November 18, 2005	Last day to apply for Drop Fail Status
December 1, 2005	Last day to apply to graduate from Master's program in May
December 2, 2005	Last day of classes (Fall semester)

December 5-13, 2005	Exams
December 15, 2005	Last day to apply to graduate from undergraduate or technical program in May
January 4, 2006	Classes begin
January 17, 2006	Last day to register for a course – Winter semester
February 1, 2006	President's List Reception
February 14, 2006	Founder's Day
February 17, 2006	Last day to drop a course without academic penalty
February 20-24, 2006	Mid-term Study Break
February 24, 2006	University Day
February 28, 2006	Last day to apply to the Animal Health Technology program
March 24, 2006	Last day to apply for Drop Fail Status
April 7, 2006	Last day of classes – Winter semester
April 10-20, 2006	Winter semester examinations
April 14, 2006	Good Friday – No exams
April 17, 2006	Easter Monday – No exams
May 5, 2006	Convocation
June 30, 2006	Last day to cancel registration and residence application and receive refund
July 2, 2006	Last day to apply to graduate from Master's program in October.

General Information

Programs Offered

The Nova Scotia Agricultural College was formally opened in 1905 to assume and expand the work that for several years had been carried on by the School of Horticulture in Wolfville and the School of Agriculture in Truro. The College operates under the authority of an Act of the Legislature of Nova Scotia.

A wide range of programs is offered at NSAC. In addition to a B.Sc.(Agr.), offered in association with Dalhousie University, the first two years of an Engineering degree, a two-year Pre-Veterinary Medicine program, a B.Tech (Environmental Horticulture), B.Tech in Applied Science, two technician programs, five technology programs, and numerous continuing education courses are offered.

Students who wish to take the two-year Pre-Veterinary Medicine program to meet the admission requirements of the Atlantic Veterinary College at the University of Prince Edward Island will be counselled in their selection of courses.

Students completing 22 specified courses of the Engineering degree program may complete their professional engineering program with a further two years in any engineering discipline at Dalhousie University's Faculty of Engineering or they may apply to any other institution.

Two-year programs leading to Technician diplomas are offered in Agricultural Business and Animal Science. Graduates may continue their studies in a program of directed studies for a third year and earn a Diploma of Technology in Agriculture.

Two- and three-year Diploma of Technology programs are available in the areas of Agriculture, Animal Health, Environmental Horticulture, Plant Science, and Farming.

The Nova Scotia Agricultural College via a unique cooperation with Dalhousie University offers a Master of Science program. The M.Sc. degree is granted by Dalhousie University in association with NSAC, the only educational institution in the Atlantic Region with the faculty and facilities capable of providing such a program of study. Through a similar affiliation, students may obtain a Ph.D. in Biology from Dalhousie University. NSAC may also host graduate students registered at other acceptable universities.

The various programs for the 2005/2006 college year are listed and described in this calendar. The Faculty reserves the right to make any necessary revisions and additions.

The Faculty reserves the right to withhold any courses for which fewer than five students apply.

The Faculty will give sympathetic consideration to any student who wishes to take a special selection of courses in order to fulfill a specific need. The choice of courses will be limited to those that do not conflict when scheduled.

International

Exchange Programs

NSAC is committed to being a leader in global food security. Opportunities are available for students to participate in this process by enhancing their global knowledge base and professional skill set. Students can participate in a variety of ways: for one week, one semester or one full academic year.

NSAC Formalized Student Exchanges

- One or two semesters abroad
- Tuition is paid at NSAC. Canadian students are eligible for Canada Student Loans
- Courses recognized for transfer credit by NSAC & partner institution

Norway Norwegian University of Life Sciences

Some courses taught in English (Bursary available)

Finland Häme Polytechnique

Some courses taught in English

England Writtle College

Denmark The Royal Veterinary & Agricultural University

Some courses taught in English

USA Virginia Tech (Bursary available)

University of Iowa (Bursary available)

Mexico Universidad Autonoma de Baja California

Some Spanish language required (Bursary available)

Institute Tecnico Agricola de Oaxaca

Some Spanish language required (Bursary available)

Canada Marine Institute, Memorial University of Newfoundland

(Bursary available)

Université Laval

French language required

NSAC Formalized Study Agreements

- One or two semesters abroad
- International student tuition fees apply. Canadian students are eligible for Canada Student Loans.
- Courses recognized for transfer credit by NSAC & partner institution

Czech Republic Czech University of Agriculture Prague

Some courses taught in English
Mendal University of Agriculture & Forestry
Some courses taught in English

Korea Cheonan Yonam College
Korean language skills required for study
Chungju National University
Korean language skills required for study

Taiwan National Chiayi University
Chinese language skills required for study

Thailand King Mongkut's University of Technology Thonburi
Thai language skills required for study

International Course Credits

- One- to three-week course offerings where students travel abroad with NSAC faculty for the delivery of courses
 - Tuition is paid at NSAC; Canadian students are eligible for Canada Student Loans
 - Credit and non-credit options available
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Cuba Universidad de Cienfuegos
Agro-Eco Tour

Jamaica College of Agriculture, Science, & Education
Food Systems in the Tropics

Central Europe: Austria, Czech Republic, Hungary, Slovakia
Various university partners
Agricultural Systems of Central Europe

Other

Students can request consideration for credit, via a Letter of Permission, when participating in international study programs

For more information on international study, work, or internship opportunities for students, please contact NSAC International at www.nsac.ns.ca/international.

Agricultural Colleges Exchange Program

This program provides an opportunity for technical students in several of the programs to enrol in another Canadian college for one semester of their second academic year. In this way they broaden their study program.

Other colleges participating with NSAC in this program are:

- Ontario Agricultural College, University of Guelph, Guelph, Ontario
- Eastern College, Newfoundland & Labrador
- Olds College, Olds, Alberta
- Lakeland College, Vermilion Campus, Vermilion, Alberta
- University of Maine
- Writtle College, England

Arrangements may also be made for students who wish to complete a semester of study in Britain.

Students wishing to do a technical exchange program at another institution must have that program approved by the NSAC Curriculum Committee. The request should be submitted to the Curriculum Committee by the student's program advisor or the Department Head. Upon approval of the program, the Chair of the Curriculum Committee will recommend to the Registrar which courses will be replaced in the student's program and which courses must be completed at the host institution. The programs must be laid out before the student leaves for the exchange institution.

Facilities

The Nova Scotia Agricultural College is located on a 165-hectare property at Bible Hill, a kilometer northeast of Truro, Nova Scotia. The record of the College's graduates in the past 90 years is conclusive evidence that students obtain a sound agricultural education in the programs offered.

The College buildings – Cumming Hall, Harlow Institute, Banting Building, MacRae Library, Langille Athletic Centre, Collins Horticultural Building, Cox Institute of Agricultural Technology, Boulden Building, Hancock Veterinary Building, Haley Institute, the Dairy Building, MacMillan Show Centre, and a modern farm building complex – provide excellent teaching and research facilities, as well as offices and laboratories for faculty and staff and for some staff of the Nova Scotia Department of Agriculture and Fisheries. Fraser House, Trueman House, Chapman House, and Jenkins Hall provide excellent accommodation and dining facilities for male and female students.

Post Office Address

Nova Scotia Agricultural College
PO Box 550
Truro, NS B2N 5E3

Telephone

Registry Office: (902) 893-6722
Toll-free: 1-888-700-6722

Website

www.nsac.ns.ca

College Colours

Royal blue and regular gold

Student Services

The Dean of Student Services is responsible for all non-classroom aspects of student life from initial acceptance to graduation. This includes areas such as residence and food services, medical/counselling services, career services, and athletics.

Athletics

Recreational activities.

The Langille Athletic Centre provides an opportunity for students to choose a number of activities to enjoy during their leisure time. Racquetball, squash, and badminton are very popular racquet games. The spacious facility includes a power lifting room with free weights and a number of specific benches for the serious lifter. A fitness and muscle toning room contains individual weight machines, stair climbers, bikes, rowing machines, and other equipment for the

individual who wants to maintain a level of fitness. Swimming, tennis, golf, and curling facilities are also available, off campus, to students during the academic year.

Intramural athletics. The intramural program includes competition in soccer, softball, volleyball, hockey, basketball, badminton, table tennis, racquetball, squash, flag football, and ultimate Frisbee.

Varsity athletics. NSAC is a member of the Atlantic Colleges Athletic Association, which includes ten colleges/universities. Conference sports for both men and women include soccer, volleyball, and basketball. Winners from the ACAA advance to the national championships administered by the Canadian Colleges Athletic Association.

Also recognized as varsity teams are men's and women's woodsmen and rugby teams. Rugby teams compete with other postsecondary teams in the Maritimes. The woodsmen teams compete in tournaments throughout the year against teams from New Brunswick, Quebec, Ontario, Maine, Vermont, and New York.

Career Services

The Nova Scotia Agricultural College provides facilities and personnel to assist graduates and undergraduates to obtain part-time, summer, and permanent employment.

Career Services contacts representatives of the agricultural industry to arrange for on- and off-campus recruitment of students. Individual counselling related to career planning and employment information associated with agriculture is available. Students are informed of employment opportunities, which are posted on bulletin boards at various locations on campus. General information on career planning, potential employers, and exchange programs is also available at Career Services.

Health Services

The clinic is located in the Dairy Building. Daily hours are maintained. General health concerns and referrals to medical doctors, dentists, and other specialists are made through the Assistant Dean Health Services. It is strongly recommended that all students obtain medical insurance, which at minimum provides coverage for prescription drugs, physiotherapy, and accidental dental injury. This type of insurance is required of all students playing varsity sports and students who are not Canadian citizens, and may be required by individual academic departments for participation in laboratory classes.

Residence and Food Services

Accommodation and dining facilities are available for up to 350 students in co-educational and single-sex arrangements. Three residences—Chapman, Fraser and Trueman—are equipped with private and shared accommodation, modern laundry facilities, mail delivery, and student lounge/games room. Each room is equipped with basic furnishings such as bed, mattress, desk, chair, closet, and drapes. Students are encouraged to develop their social and personal potential through participation in House Council, Student Union, and Student Services activities.

An alternative student accommodation is offered at Trueman House, which features apartment-like living in large, bright, recently renovated rooms. Each 11-bedroom section (apartment) includes a fully equipped kitchen, sitting room with cable TV, high-speed Internet, microwave, laundry room, storage area, and shared washrooms and showers.

Dining Services for on-campus students provide a balanced, healthy menu from which students may choose a variety of main-course and dessert items. Special meals are held to celebrate many special occasions such as Thanksgiving, Christmas, etc.

Student Government

Through a system of self-government, students are encouraged to accept the greatest possible degree of responsibility in connection with their own affairs. Only full-time students taking regular programs are allowed to act as executive members of the Student Union or as members of student committees.

Faculty members, appointed by the Faculty, act in an advisory capacity with student committees on financial, literary, social, and athletic affairs so that every possible benefit may be derived from these activities.

Computing Services

Information Technology Services is responsible for managing the computing resources found on the NSAC Academic Network. The mandate of ITS is to:

- provide a consistent, state-of-the-art academic computing environment;
- provide broad and flexible access;
- provide an equitable distribution of academic computing resources to meet the demands of the College community;
- ensure that graduating students are equipped to meet the challenges of new communications technology; and
- provide efficient and effective management of academic computing resources.

ITS manages over 120 workstations running Windows environments. The workstations are distributed among five general-access labs and connected through a campus-wide network. Microsoft and Corel Suite applications, mathematical, statistical, and CAD software, as well as discipline-specific software, are available from any workstation. Students have full access to both Internet and e-mail services from any lab.

The ITS Media Centre provides students with access to digital cameras, multimedia projectors, scanners, imaging software, and colour printing.

The MacRae Library catalogue and library catalogues from other educational institutions are available through the campus network.

Internet and e-mail services are available to students living in residence. For further information about residence connections please contact Student Services at 893-6672.

For further information about any other computing question please contact the Helpdesk:

e-mail helpdesk@nsac.ns.ca

phone (902) 893-6154

fax (902) 893-5449

The Policy Governing Access To and Use of NSAC Academic Computing and the Academic Computing Services User Policy govern the use of computing resources.

Library

All registered students have access to MacRae Library and Novanet collections. This comprises well over two million volumes in 10 university library collections. The MacRae Library's Electronic Resources (MLER) consist of an expanding collection of electronic databases, journals and other electronic resources that provide access to the world literature of the basic sciences, the agricultural and food sciences as well as core collections in the social sciences and humanities. The Novanet catalogue—the main access point to both electronic and print collections—is available at saturn.novanet.ns.ca. MacRae Library electronic resources can be accessed from any computer workstation on the campus network, from the 32 computers in the Library's Information Commons, and from remote locations for people authenticated by the campus proxy server. The Library subscribes to the main databases for the agricultural sciences,

including indexing, abstracting, and aggregator databases (CAB Abstracts, AGRICOLA, FSTA, AGRIS, BIO & AGR Index, Academic Search Premier), a growing number of which provide links to the full-text online, and participates in the Canadian Research Knowledge Network (CRKN) national site licensing initiatives. NSAC students also have access to approximately 1300 full-text journals (JSTOR, ScienceDirect, ASAE Technical Library, Web of Science, Wiley Interscience, Springer-Verlag, American Chemical Society, Royal Society of Chemistry, Institute of Physics) and approximately 400 NetLibrary e-books.

Continuing and Distance Education

The Centre for Continuing and Distance Education

The NSAC Centre for Continuing and Distance Education delivers educational programs and courses to clients who wish to pursue:

- certificate programs that are not part of a College credit program
- studies that are part of a College credit program, but that are delivered in a non-traditional manner, or
- studies that are of general interest to the public.

The Centre focuses its attention on traditional agriculture, aquaculture, related and value-added enterprises, and other land-based activities such as environmental horticulture, which includes landscape design and installation, turf management and arboriculture.

The Centre tailors its offerings to meet the needs of its clients. We believe that one of the key educational components of the new economy is life-long learning, and we consider it a central part of our mandate to accommodate professionals seeking to upgrade their skills and training.

The Centre also provides custom training, making the extensive knowledge base of NSAC faculty and staff available to clients with specific industry needs.

The Centre offers a number of credit and non-credit courses to students. Students who wish to attend NSAC but lack specific qualifications for admission have an opportunity to upgrade their pre-university math or sciences by enrolling in the Introductory Studies courses.

A number of credit courses are held in the Spring semester. These offerings are based on students' needs. Contact us for a list of scheduled courses.

Distance Education: The Centre is actively involved in the development of the NSAC's distance education capacity and supports the use of WebCT for both on-campus and distance courses. The Centre coordinates the development and delivery of web-based credit courses. The following courses are currently available:

- AGRI1000 Agricultural Ecosystems
- AGRI1001 Food Security
- AGRI1002 Transition to Organic Agriculture
- AGRN0200 Potato Production
- AGRN1000 Organic Field Crop Management
- AGRN3002 Potato Production
- ANSC1000 Organic Livestock Production
- ECON1000 Principles of Microeconomics
- ENVS1000 Basic Composting Skills
- HORT2000 Vegetable Production
- HORT2001 Principles of Organic Horticulture

For descriptions of these courses, please see the Description of Courses section of this calendar.

Other courses are currently under development; please check the CDE Web site (www.nsa.ca/cde) for updated information.

For more information or for a copy of our calendar, contact:

Centre for Continuing & Distance Education
Nova Scotia Agricultural College
PO Box 550
Truro, NS B2N 5E3
Phone: (902) 893-6666
Fax: (902) 895-5528
E-mail: cde@nsac.ns.ca
Web site: www.nsac.ns.ca/cde

On campus, the Centre's main office is located in Room 276 of the Haley Institute.

Churches

Churches representing a wide range of denominations are located in Truro and Bible Hill.

Day Care

The NSAC Day Care is a non-profit organization governed by a Board of Advisors appointed by the President. The day care is open five days a week from 7:30 am to 6:00 pm. It is licensed under the Department of Community Services for 33 children per day. A reduced rate is available for the children of students. Five subsidized spaces are also funded by the Department of Community Services. These spaces are available only to students whose income falls below a certain level. Remember to reserve early to ensure a space in September. The NSAC Day Care promotes quality child care.

Admissions Information

Admissions Status

Full-time

Students are admitted as full-time (three or more courses per semester) students to a program of study if they meet all current admission requirements of that program at the time of application and there is room in the program. The Registrar may admit full-time students on a probationary basis. Full-time students in good standing have the right to move through the program in the normal fashion.

Part-time

Students are admitted as part-time (fewer than three courses per semester) students to a program of study if they meet all the current admission requirements of that program at the time of application and there is room in the program. The Registrar may admit part-time students on a probationary basis. Part-time students in good standing have the right to move through the program in the normal fashion.

Mature

Students who are at least 23 years of age and who do not meet admission requirements may be admitted as either full-time or part-time students on the basis of being mature applicants. Mature applicants are considered on a case-by-case basis, and may be admitted on a probationary basis. Mature students who complete one full semester in good standing assume normal student status.

Visiting

Students are admitted as visiting students on the basis of a Letter of Permission from another postsecondary institution. Enrolment in specific courses is subject to availability of seats in the

course. Visiting students do not have student status beyond the semester to which they are admitted.

Unclassified

Students are admitted to a single course as unclassified students upon permission of the Registrar and the instructor. Unclassified students do not have ongoing student status and may not enroll in more than one course.

No Program

Students may be admitted to one or more courses on a "no program" basis. Admission is to specified courses on a case-by-case basis. No-program students have no ongoing status.

International

Students who do not have Canadian citizenship or permanent residence in Canada may be admitted as international students. These students must produce proof of a student visa before permission to register will be granted.

International students are required to purchase the Health Insurance arranged by the College, for their term of study.

Admission

It is the responsibility of each applicant to ensure that the application file is complete. The following must be submitted by each applicant to the Office of the Registrar:

- a completed application form (forms not properly completed will delay processing)
- the application fee of \$25
- an official record of high school work
- an official transcript for work done at previous post-secondary institutions (if applicable)
- evidence of competency in English for applicants whose native language is not English (see information on English Language Tests)
- supplementary information as required for specific programs.

Response To Applications

NSAC will respond to your application as promptly as possible and will advise you of any documentation still required. When documentation is complete, applications are placed in the hands of the appropriate admissions committee. Although every effort is made to have decisions made quickly, there will be some delay at times, particularly in programs where competition for places is keen.

As soon as decisions are made, whether admission, deferral or rejection, applicants will be advised.

Please note that admission to many programs is limited. Therefore, possession of minimum requirements does not guarantee admission.

Early Acceptance

Applicants currently attending high school who have good grades, i.e., a strong average, may be given early acceptance, conditional on satisfactory completion of work for which they are currently enrolled.

Final Acceptance

Applicants must successfully complete high school classes in the required subjects or leave their current postsecondary institution in good standing.

Academic Probation

Students may be admitted to NSAC on Academic Probation:

- (a) if the student is a mature student who does not meet admission requirements for the program or
- (b) if the student's last full-time enrolment at any institution has resulted in dismissal or suspension for academic reasons, or
- (c) if the student meets most, but not all, of the requirements for admission.

When a student is admitted on probation, all regulations for probationary students apply.

English Language Tests

If English is not your native language, you must provide official results from one of the following standardized tests:

- TOEFL – a minimum score of 550 OR a minimum computer-based TOEFL score of 213
- MELAB – a minimum score of 80
- IELTS – a minimum score of 6.0 is required

Note: Students who meet all admission requirements except for the English Testing levels may be accepted to NSAC subject to completion of a University Preparatory English Program offered by the International Language Institute, in cooperation with NSAC. Please contact NSAC for more information.

Application Deadlines For Domestic Students

The application deadline for all programs for Fall semester is August 1 with the following exception:

Animal Health Technology – February 28.

The application deadline for Winter semester is December 1.

Application Deadlines For International Students

The application deadline for all programs for Fall semester is March 1. The application deadline for Winter semester is July 1.

Entrance Requirements

NSAC Entrance Requirements, by Program, 2005/2006

Applicants must have an overall average of 60% in the courses required for admission unless otherwise indicated.

All candidates for admission to the program leading to a B.Sc.(Agr.) and to the Pre-Veterinary program must present high school graduation certificates showing an average of at least 60%, with no mark below 50%, in five university preparatory subjects, including:

- English
- Pre-Calculus Mathematics (or 70% in NS Academic Mathematics 12, NS Advanced Mathematics 12, or NL3200 is required)
- any two of the following science requirements: Biology, Chemistry¹, Physics¹, Geology, Oceanography² or Agriculture²
- one other Grade 12 university preparatory subject.

1 Students who do not have Grade 12 Chemistry or Grade 12 Physics will be required (depending on the major selected) to take non-credit prerequisite courses in Chemistry and Physics in their first year.

2 Provided students have five Grade 12 university preparatory credits including English and Math, they are able to use NS Oceans 11 and/or NS Agriculture 11 to meet the science requirements.

PROGRAM	ENGLISH	MATHMATICS	CHEMISTRY	BIOLOGY	PHYSICS	ELECTIVE
Engineering Diploma	NS 12	NS PreCal 12 or Academic 121	NS 12	N/A	NS 12	NS 12
	NB 122 or 121	NB 120 or 1211 or 1221	NB122 or 121		NB 122	NB 122
	PE 621	PE 621	PE 621		PE 621	PE 621
	NL 3101 & 3201	NL 3205 or 32041	NL 3202		NL 3201 or 3202	NL 3000 level
Technician	NS 12	NS 11	NS 11	NS 10 or Integrated Sci.	N/A	N/A
50% minimum average req'd	NB 122 or 121	NB 111 or 112	NB 111 or 112	NB102		
	PE 621	PE 521	PE 521	PE 521		
	NL 3101 & 3201	NL 2204 or 2205	NL 2201	NL 2201 or 2202		
Technology	NS 12	NS PreCal 12 or Academic 121	NS 12	NS 12	N/A	NS 12
(Veterinary)	NB 122 or 121	NB 120 or 1211 or 1221	NB 122	NB 122 or 120		NB 122
	PE 621	PE 621	PE 621	PE 621		PE 621
	NL 3101 & 3201	NL 3205 or 32041	NL 3202	NL 3201 or 3202		NL 3000 level
Technology	NS 12	NS PreCal 12 or Academic 121	NS 11	NS 12	N/A	NS 12
(Environmental Horticulture)	NB 122 or 121	NB 120 or 1211 or 1221	NB 111 or 112	NB 120 or 122		NB 122
	PE 621	PE 621	PE 521	PE 621		PE 621
	NL 3101 & 3201	NL 3205 or 32041	NL 2202	NL 3201		NL 3000 level
Technology	NS 12	NS 11	NS 11	NS 10 or Integrated Sci.	N/A	N/A
(Plant Science)	NB 122 or 121	NB 111 or 112	NB 111 or 112	NB102		
No minimum average req'd	PE 621	PE 521	PE 521	PE 521		
	NL 3101 & 3201	NL 2204 or 2205	NL 2201	NL 2201 or 2202		
Technology (Agricultural)	Satisfactory completion of Technician Diploma.					
Technology (Farming)	Satisfactory completion of first year of a Technician program.					
Bachelor of Technology (Environmental Horticulture)	Years one and two are satisfied by the successful completion of the Environmental Horticulture Technology program or its equivalent, with a cumulative average of at least 70%.1 70% or higher					

Key NS = Nova Scotia NB = New Brunswick PE = Prince Edward Island NL = Newfoundland & Labrador

Note: Possession of the minimum entrance requirements does not guarantee admission.

Admission Requirements for B.Sc.(Agr.)

Pre-Veterinary Medicine and Engineering

All candidates for admission to the program leading to a B.Sc.(Agr.) and to the Pre-Veterinary program must present high school graduation certificates showing an average of at least 60%, with no mark below 50%, in five university preparatory subjects, including:

- English
- Pre-Calculus Mathematics (or 70% in NS Academic Mathematics 12, NS Advanced Mathematics 12, or NL3200 is required)
- any two of the following science requirements: Biology, Chemistry¹, Physics¹, Geology, Oceanography² or Agriculture²
- one other Grade 12 university preparatory subject.

1 Students who do not have Grade 12 Chemistry or Grade 12 Physics will be required (depending on the major selected) to take non-credit prerequisite courses in Chemistry and Physics in their first year.

2 Provided students have five Grade 12 university preparatory credits including English and Math, they are able to use NS Oceans 11 and/or NS Agriculture 11 to meet the science requirements.,

All candidates for admission to the Engineering program must present high school graduation certificates showing an average of at least 60%, with no mark below 50%, in Grade 12 university preparatory subjects including English, Pre-Calculus Mathematics (or 70% in NS Mathematics 12 or NL 3200 is acceptable), Chemistry, Physics, and one other subject.

Graduates of Newfoundland & Labrador Grade 12 will be considered for direct entry if their average is 60% or higher in five university preparatory subjects, including English, Mathematics (70% in Math 3200 is acceptable), Chemistry, and Biology or Physics. The Grade 12–level courses for Mathematics and English must be the third full year of high school study in these subjects, and for Chemistry and Biology or Physics the second full year.

Students who have all the requirements except Grade 12 Chemistry may be permitted to complete a preparatory Chemistry course (CHEM0050) in their first term. Prior approval must be given from the Registrar before enrolling for this course.

Admission Requirements for Bachelor of Technology Degree

(Environmental Horticulture)

Environmental Horticulture

The B.Tech (Environmental Horticulture) major is designed to provide a broad, comprehensive education for those planning a career in the landscape horticulture profession. It will prepare students to work successfully in the diverse landscape industry or create their own businesses within the industry. This major could also lead to graduate study in the area of landscape architecture and related fields.

Years one and two of this program are satisfied by the successful completion of the Environmental Horticulture Technology program or its equivalent, with a cumulative average of at least 70%. Applicants who meet the general requirements described above (two years postsecondary) may be admitted to the program upon completion of prescribed preparatory courses.

Admission Requirements for Bachelor of Technology in Applied Science

Applicants are required to have a high school graduation certificate with an average of at least 60%, and no mark below 50%, in five Grade 12 university preparatory subjects including English, Physics, Pre-Calculus Math (or 70% in NS Academic Math or NL 3200 acceptable) and two other subjects, preferably Chemistry and Biology.

Admission Requirements for Technician Programs

Agricultural Business and Animal Science Technician

Applicants are required to have a high school graduation certificate with an average of at least 50%, with university preparatory courses in Grade 12 English, Grade 11 Mathematics, Grade 11 Chemistry, and either Grade 10 Biology or Integrated Science.

Admission Requirements for Technology Programs

Animal Health/Veterinary Technology

Applicants are required to have a high school graduation certificate with pass marks and an average of at least 60% in five Grade 12 university preparatory subjects: Biology, Chemistry, English, Pre-Calculus Mathematics (or 70% in NS Academic Math 12 or NL Math 3200 acceptable) and one other course. The selection process includes a full day of interviews and orientation. Applications will be accepted between January 2 and February 28.

Environmental Horticulture Technology

Applicants are required to have a high school graduation certificate with pass marks and an average of at least 60% in four Grade 12 university preparatory subjects—Biology, English, Mathematics, and one other course—plus Grade 11 Chemistry. Applicants may be required to attend a selection interview.

Plant Science Technology

Applicants are required to have a high school graduation certificate with an average of at least 50%, with university preparatory courses in Grade 12 English, Grade 11 Mathematics, Grade 11 Chemistry, and either Grade 10 Biology or Integrated Science.

Admission Requirements for Technology Programs Entered from Technician Programs

Agricultural Technology

A person with an NSAC Technician Diploma or equivalent may apply to continue studies that would lead to a Diploma of Technology in Agricultural Technology. Courses and projects will be selected to help prepare for the chosen field of agricultural endeavour.

Farming Technology

Admission to this program requires satisfactory completion of the first year of the Agricultural Business or Animal Science Technician or Plant Science Technology program, and a satisfactory selection interview.

Admission Requirements for Technology Programs Entered from Technician Programs

Admission Requirements for B.Sc Agr.) Program for Students Graduating from High Schools in The United States Of America

Students must have achieved a "B" average in five Grade 12 university preparatory subjects, including:

- English
- Pre-Calculus Mathematics
- any two of the following science requirements: Biology, Chemistry, Physics, Geology, Oceanography or Agriculture
- one other Grade 12 university preparatory subject.

Students must have achieved a combined score of at least 1100 in two SAT tests.

Students who are not U.S. citizens, or whose mother tongue is other than English, may be subject to additional requirements.

*Note: Students who do not have Grade 12 Chemistry or Grade 12 Physics will be required (depending on the major selected) to take non-credit prerequisite courses in Chemistry and Physics in their first year.

Schedule of Fees

All fees are due and payable as of the first day of classes (September 8, 2005 for the Fall semester and January 4, 2006 for the Winter semester). Payment must be by cash, money order, certified cheque, Visa, MasterCard, or debit card. Any student with an unpaid account at the end of the second week of classes will be permitted to continue only upon settlement of the outstanding account.

Tuition Fees (Canadian Citizens And Permanent Residents)

The College reserves the right to make changes without notice in its published scale of charges for tuition, accommodations and meals, and other fees.

	Price per Course
Degree level	\$529
Technical level	\$327
Animal Health Technology Courses	\$439
Audit (Degree level)	\$529
Audit (Technical level)	\$327
Introductory Studies (non-credit)	\$207
Distance Education Course Fee	\$25

For information on Graduate Program fees, contact the Research & Graduate Studies Office.

Undergraduates are permitted to register for graduate-level courses only with the approval of the Graduate Coordinator. In cases where undergraduates are permitted to register for graduate courses, the graduate tuition fee will be applied.

Tuition Fees (International Students)

	Price per Course
Degree level	\$1058
Technical level	\$1058

Work Term (Practicum) Fees

All practicums are charged the equivalent of at least three technical course fees. Students enrolled in a practicum are regarded as full-time students. As such, they are eligible for financial assistance.

Books 2005/2006

Full-time students (approx./year) \$1200

Student and Technology Renewal Fees

A full-time student fee is applicable to students registered in three or more courses in a semester. It is compulsory. The fee includes Athletics, Caution/Development Fund, Student Union, and Health Service fees. A per-course student fee is applicable to part-time students. A technology renewal fee is charged to all full- and part-time students.

Caution/Development Fund

Full-time students, at the beginning of each semester, must make a payment to cover the cost of damages to College property, breakage in labs, etc.

In residence, damage to floors, walls, doors, windows, lighting, the sprinkler system, or furniture in any bedroom will be charged to the occupants of the room in equal shares, and damage to the common parts of the College and residences will be charged to the entire student body if the offender is not charged.

All students are subject to a general levy through the office of the Dean of Student Services for deliberate breakage and damage to buildings and equipment that cannot be traced. The balance of monies collected and not required to cover damages/breakages will be placed into funds to support student residence development, study abroad, and broad-based student development activities and services.

Full-time Students (per semester)

	2005/2006
Student Fees	\$147
Technology Renewal	\$50

Part-time Students (per course)

This fee is applicable to students who are registered in one or two courses in a semester. It is compulsory and non-refundable. Part-time students receive a student card.

Part-time Student Fee	\$3
Technology Renewal	\$15

Program-Related Fees

Students may be required to pay specific program-related fees not shown in the calendar. These may include fees for items such as laboratory coats, steel-toed boots, hard hats, etc.

Full-time students in the Animal Health Technology program are charged an additional Materials and Service Fee. In 2004/2005 this fee was \$75 per semester. This fee is payable at registration. For a complete list of supplies and services that are provided to Animal Health Technology students in return for this fee, contact the Department of Plant and Animal Sciences.

NSAC requires that all students entering the AHT program be vaccinated against rabies and show proof of vaccination prior to beginning the program. This is required as a result of the increasing possibility that animals in this region may be infected. The HDVC is required in three doses—one on each of days 0, 7, and 21. AHT students will be required to have their serum tested for rabies antibodies two years following the vaccination and those with inadequate levels of protection will be required to get an additional dose of HDVC.

Application to Graduate

Students intending to graduate in May must submit an "Application to Graduate" to the Registrar by the previous December 15. Students who apply by November 15 to graduate will receive confirmation from the Registrar prior to the start of the winter term. There is no fee charged for an application to graduate submitted by the deadline. Applications that are submitted after December 15 must be accompanied by a \$50 late fee.

Transcripts

Students' academic records, including their official NSAC files, are the property of NSAC. Students' records are privileged information and to that end transcripts will not be released by the Registrar to those outside the University without the prior written permission of the student. As required by their appointment, academic administrators within NSAC have access to students' complete academic records.

To request a transcript, students must complete the appropriate form, obtainable from the Registrar's Office, or mail or fax a signed letter of request to the Registrar's Office. It is not possible to accept a transcript request over the telephone. Transcript requests are processed strictly in the order in which they are received. Although the normal processing time is approximately five working days, additional time will be required at peak periods.

Official transcripts are forwarded directly from the Registrar's Office to an official third party.

Students whose accounts are in arrears will be denied transcripts until the debt is paid.

Registration Deposit

New Students \$200

The final admission step for new students is to submit the \$200 Registration Deposit to the Office of the Registrar. When this deposit is received, the student is granted a Permit to Register and will receive a package guiding him or her through the registration process. The registration deposit will be refunded, up to but not after June 30, for students who submit written notice of cancellation by that time. No deposits received after June 30 will be refunded.

Returning Students

Students with outstanding balances will not be permitted to register for the Fall or Winter semester without making arrangements to settle their accounts with Financial Services.

Residence Deposit/Cancellation Fee

New students wishing to apply for accommodation in residence must submit the \$190 Residence Deposit by June 1. However, this may be submitted at the same time as the Registration Deposit. Deposits are applied to total residence fees. The residence deposit will be refunded, up to but not after June 30, for students who submit written notice of cancellation by that time. No deposits received after June 30 will be refunded.

Returning Students Registered for Residence Room Draw

Returning students wishing to take part in the March Room Draw should contact the Office of the Dean of Student Services for details. A cancellation fee of \$300 will be levied against any students failing to cancel their application in writing by August 20. **Note:** students with outstanding balances on their accounts will not be permitted to enter the room draw.

Early Arrivals to Residence

Accommodating early arrivals in residence is normally not possible, but in extenuating circumstances, early arrivals may be accommodated. A written request documenting why alternative arrangements cannot be made must be provided to the Residence Manager no later than August 15 or December 1 for the Fall and Winter semesters respectively. Those granted permission to arrive early will be charged a per diem rate.

Residence And Meal Plan Fees

The following term rates are in effect in 2005/2006.

Plan	Price per Term	
	Fall 2005	Winter 2006
Shared room and 19 meals	\$2817	\$2817
Shared room and 14 meals	\$2769	\$2769
Private room and 19 meals	\$3074	\$3074
Private room and 14 meals	\$3026	\$3026
Large private room and 19 meals	\$3296	\$3296
Large private room and 14 meals	\$3248	\$3248

Please note that students may choose either 19 meals or 14 meals per week. Once the option has been selected no plan changes during the semester are permitted. A change of plan can be made at the end of the Fall semester for the Winter semester.

Other Residence Fees (Per Year)

House Fee	\$30
Laundry Fee	\$60

Please note that residence students will be charged the following fees for lost keys: \$50 for a room key; \$100 for a front door key.

Graduate/Mature Student Housing

NSAC offers alternate student accommodation on the ground floor of Trueman House.

This program features apartment-style living with peers. It includes a fully equipped kitchen with lots of cupboard space. The furnished sitting area includes a TV with satellite service and a computer with high-speed Internet; students share these common areas from eleven private rooms. Each student room is furnished and includes local phone service, satellite, and high-speed Internet service. The washroom and shower rooms are shared.

Rates for 2005/2006 are \$546 and \$577 monthly and are payable at the first of each month. This includes access to the laundry room, cleaning of common areas, garbage removal, parking, utilities, high-speed Internet, satellite, and local phone service.

Students wishing to apply should forward an application and deposit of \$250 to reserve space in this program. This deposit will be applied to the first month's rent. The deposit will be refunded up to, but no later than, one month prior to your arrival date. Students are required to notify the residence office in writing, one month prior to their intent to terminate their residence agreement.

Students participating in this program may, but are not required to, purchase a meal plan from Food Services in Jenkins Hall.

Note: Phones, TVs, computers, and connection cables are the responsibility of the student.

Refunds

Withdrawal from the College and/or residence is not effective until the student has completed the appropriate documentation as specified in the Calendar and the Residence Handbook, and has returned their ID Card to Student Services.

Student fees will be refunded to students who withdraw during the first two weeks of the semester. After the second week, there will be no refund except in the case of a withdrawal for health or other compelling compassionate reasons.

Tuition Fees

Refunds for students who withdraw from the College will be as follows:

Until the end of 10th class day	100%
Until the end of 15th class day	80%
Until the end of 20th class day	50%
Until the end of 25th class day	25%
Beyond 25th class day	No refund

Residence Fees

Students who accept a place in residence and fail to cancel their residence application prior to August 20 for the Fall semester and December 20 for the Winter semester will forfeit their residence deposit or be levied a \$300 cancellation fee. Room fees are charged from the first day that residences are officially open. Students who withdraw from residence will be charged room fees as follows:

1st week (or any part thereof) residences are open	\$300
2nd week (or any part thereof) residences are open	\$650
3rd week (or any part thereof) residences are open	\$1200

From the end of the third week 100% of the room fee for the semester will be charged.

Meal fees are charged on a per-week basis for each week or part week prior to the student's official withdrawal from residence.

Non-payment of Fees

If fees are owing, you must arrange with Financial Services to pay outstanding fees before registration will be permitted.

Transcripts will not be issued to students with outstanding accounts.

Canada Student Loans Program

Eligible students enrolled in the degree and technical programs can apply for Government of Canada student loans and bursaries. Application for a Certificate of Eligibility must be made to the issuing authority of the applicant's province of residence.

Application forms are available as follows:

Nova Scotia

Department of Education
PO Box 2290
Halifax Central
Halifax, NS B3J 3C8

New Brunswick

Department of Advanced Education and Labour
PO Box 6000
Fredericton, NB E3B 5H1

Prince Edward Island

Department of Education
 PO Box 2000
 Charlottetown, PE C1A 7N8

Newfoundland & Labrador

Department of Education
 Student Aid Division
 St. John's, NL A1C 5R9

The application should be completed and filed with the issuing authority during the early summer, so that an eligibility form can be issued before Registration Day. The applicant then presents the Certificate of Eligibility at registration time. Once it is signed, the student may take it to the lending agency to arrange for funds.

International Student Information**Application Deadlines**

September admission	March 1
January admission	July 1

Costs (in Canadian dollars)

Tuition Fees (based on 10 credits)	2005/2006
Degree	\$10,580
Technician/Technology	\$10,580

Estimated Expenses **2005/2006**

Books and instruments (per semester)	\$600
Health insurance (single coverage, per semester; required for all non-Canadian students)	\$210

Compulsory Fees **2005/2006**

(Compulsory fees include athletic, caution/development fund, student union, technology renewal, health service, laundry, and house fees.)

per semester	\$240
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Residence Plus Meal Plans

(per semester)	\$2769–3296
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For more details see Schedule of Fees on page 17.

Off-Campus Accommodations

One-room apartment:	\$300– 500/month
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Boarding: \$200–
300/month

Information regarding off-campus housing and leases can be found on the Student Services website: www.nsac.ns.ca/stuserv/

**Non-Resident Meal Plans (2004/2005 rate)
(tax included)**

10 meals (lunches only) \$53.45

10 meals (lunches & suppers) \$64.15

** 2005/2006 rate not available at time of printing*

Personal Expenses

Clothing and amusement (approx.): \$1,600

Entrance Requirements

Please contact the NSAC Registrar's Office for details on entry requirements from specific countries.

English Language Requirements

If English is not your native language, you must provide official results from one of the following standardized tests:

- TOEFL – a minimum score of 550 OR a minimum computer-based TOEFL score of 213
- MELAB – a minimum score of 80
- IELTS – a minimum score of 6.0 is required

Note: Students who meet all admission requirements except for the English Testing levels may be accepted to NSAC subject to completion of a University Preparatory English Program offered by the International Language Institute, in cooperation with NSAC. Please contact NSAC for more information.

Student Visa and Health Insurance

International students must have proof of a student visa and health insurance before permission to register will be granted.

Changes in Fee Schedule

The College reserves the right to make changes without notice in its published scale of charges for tuition, accommodations and meals, and other fees.

Regulations and Procedures

All students are under the charge of the President and are responsible to him at all times for their conduct. The President is authorized to make any additional regulations found necessary for the discipline of the College and to impose fines or other penalties for any infraction of rules and regulations. The President has delegated responsibility for student discipline to the Dean of Student Services. College rules with respect to student behaviour and the process for dealing with student discipline are contained in the Community Standards section of the NSAC Student Handbook.

Every student is expected to show, both within and outside the College, such respect for order, morality, and the rights of others, and such sense of personal honour, as is demanded of good citizens. Students found guilty of immoral, dishonest, or improper conduct, violation of rules, or

failure to make satisfactory progress shall be liable to College discipline. Students should make themselves familiar with detailed regulations and procedures, which are published in the NSAC Student Handbook under Community Standards and the Residence Handbook, available at www.nsac.ca/stuserv/.

Students are encouraged to participate in approved College orientation activities. Hazing as a part of initiation is forbidden.

Freedom of Information and Protection of Privacy

The Freedom of Information and Protection of Privacy Act (FOIPOP) provides for the protection of an individual's right to privacy but also requires that certain records be disclosed upon request unless they are exempted from the disclosure. The Act requires that the University not disclose personal information if that information would constitute an unreasonable invasion of personal privacy. Applicants to NSAC are advised that information they provide along with other information placed in a student file will be used in conjunction with university practices for internal use and will not be disclosed to third parties except in compliance with the FOIPOP Act or as otherwise required by law.

Advising

NSAC is committed to providing students with assistance in the transition to university life and guidance throughout the academic process. First Year Advisors are assigned to all first-year students, and assist students with a wide variety of issues that can be encountered during this transitional period, from time management to program selection. Once students enter their second year they are assigned a Program Advisor to help them with their course selection and overall program planning. **However, it is important to note that the final responsibility for program success rests with the student.**

Academic Standing

- Academic records are reviewed after every term.
- Academic Probation can be assessed after each term. Students on Academic Probation can continue to register on their own while on probation if their cumulative average is at least 55.
- At the end of the academic year (after the Winter semester) academic records will be reviewed and students with poor academic records may, at that time, be placed on Academic Probation or Academically Dismissed (Required to Withdraw) for a full semester (normally the Fall semester, applying to return in the Winter semester).

Academic Probation

Academic Probation is assessed each term. Students are placed on Academic Probation if they take two or more courses and:

- they have a sessional average less than 50%, OR
- they have failed 50% or more of their courses (including Drop Fails), OR
- their cumulative average is less than 60% (less than 55% for Tech students).

Removal From Academic Probation

Students will not be removed from Academic Probation until their cumulative average is at least 60% (at least 55% for Tech students).

Academic Dismissal (Required To Withdraw)

Academic Dismissal is assessed only after the Winter semester. Students will be Dismissed for a full semester if they have two consecutive terms (normally Fall/Winter) of two or more courses where:

- they have a sessional average below 50%, OR
- they have failed 50% or more of their courses (including Drop Fails).

Note: Students returning from a period of Academic Dismissal are automatically placed on Academic Probation.

Academic Dismissal – Appeal Policy

Grounds for Appeal

The following are the only grounds that a student may use for appealing their Academic Dismissal status:

- medically documented/supported personal illness, injury or trauma
- documented/supported severe traumatic circumstances in immediate family such as death or serious illness.

Appeal Process Procedures and Deadlines

1. Students must submit a letter to the Chairperson of the Standards and Admissions Committee (through the Registrar's Office) requesting that their status be appealed. The letter should clearly demonstrate that the appeal is in accordance with the Grounds for Appeal in the section above. Documentation supporting any claims made must also be included. All information contained in the letter will be kept confidential within the committee.
2. If a student deems that any member(s) is (are) in conflict, the student may request that such member(s) be removed for the duration of the appeal hearing. This request must be made in writing through the Registrar's Office prior to the date of the hearing. The Standards and Admissions Committee will consider and rule on such a request prior to the hearing.
3. Appeals relating to Winter semester performance must be received by 4:30 pm on June 15. The Committee will meet during the following week to consider appeals.
4. Students will be informed of the Committee's decision by letter only. All decisions of the Committee are final.

Academic Responsibility

NSAC students are expected to display self-discipline and maturity throughout their period of study at the College. At times there may be considerable pressure to achieve high grades. Some students may be tempted to obtain grades in a dishonest manner. Practices such as cheating, plagiarism, and other misrepresentation relating to academic work compromise the integrity of the College and the degrees and diplomas that the College awards.

The College does not condone these nor other forms of academic misconduct under any circumstances and will take appropriate disciplinary action.

Regulations concerning Academic Misconduct can be found in the following documents: 1) NSAC Student Code of Conduct; 2) Guidelines for Dealing with Cases of Academic Dishonesty at NSAC. These documents are available at www.nsap.ns.ca/stuserv/ and in the Community Standards Handbook.

Advanced Standing

Students who have completed courses at other postsecondary institutions may be eligible to receive credit for work done on the following basis:

- Each course must be at the same academic level as the one it is replacing.
- Each course must satisfy a requirement of the student's academic program.

- Students enrolled in a four-year degree program must complete a minimum of 15 courses at NSAC to graduate.
- Students enrolled in an Engineering Diploma program must complete a minimum of 11 courses at NSAC to graduate.
- Students enrolled in a technical diploma program must complete a minimum of one-half of the required courses at NSAC to graduate.

Students may be eligible for advanced credit standing based on the results of an Advanced Placement exam (AP) or an International Baccalaureate certificate (IB). Those wishing to apply for credit at NSAC based on AP or IB must supply an official transcript of test results to the Registrar's Office. The student will be notified once the assessment is complete.

Only credits that are relevant to the student's program will be considered. Transfer credits will be awarded based on equivalent NSAC courses. Elective credits may be awarded for courses that have no direct match in the NSAC curriculum. Credits will be awarded upon admission to the B.Sc.(Agr.) degree program for students with an AP national exam with 4 or 5, or Higher Level IB classes with 5, 6, or 7. A maximum of five credits may be awarded.

Transfer credits are evaluated on an individual basis and will vary depending on each student's personal academic program. Please consult the Registrar's Office for information concerning your application and transfer credits.

Official transcripts must be submitted to the Registrar's Office before previous postsecondary work will be considered for advanced standing. **Transcripts received after August 15 for the Fall semester, or after December 1 for the Winter semester, may not be evaluated before Add/Drop deadlines.**

Athletics

All full-time students are eligible to play for teams representing the College, subject to conditions established by NSAC, the Atlantic Colleges Athletic Association, and the Canadian Colleges Athletic Association.

All teams or groups that represent the institution must be accompanied by a member of the College staff or senior leader (non-student) approved by the Athletic Director (athletics) or Dean of Student Services (groups or clubs).

Attendance in Class

All students are expected to attend all lectures and laboratory periods in the courses for which they are registered.

Specific courses have mandatory attendance requirements. In these courses, attendance requirements will be stated at the outset of the course. Absence from scheduled activities may be considered grounds for automatic failure.

Students wishing to absent themselves from classes for compassionate reasons must obtain permission from the Registrar or, in his absence, from the Dean of Student Services.

A student who arrives late for class may be refused admission.

Auditing Courses

A student may, with the permission of the instructor, audit a course. Terms and conditions of the audit will be set forth by the instructor at the outset. Students who do not fulfill the conditions may have their privileges revoked, and will not have the audit recorded on their transcript. Audit students are not entitled to evaluation of their performance.

Normal Course Load

A normal full-time course load for students registered in the degree program is considered to be five courses per semester. A normal full-time course load for students registered in the technical program is six courses per semester.

Course Overload

Students registered in the degree program who wish to take more than six courses in a single term must have the permission of the Vice-President Academic in consultation with the student's advisor. Students registered in the technical program who wish to take more than seven courses in a single term must have the permission of the Vice-President Academic in consultation with the student's advisor.

Challenge for Credit

Students who have acquired competence in material covered by an NSAC course may obtain credit for the course by means of a course challenge.

Procedures

- Application for Challenge for Credit is made to the Registrar. A Challenge for Credit is charged at 50% of the course fee.
- The department that is responsible for the course in question must be satisfied that there is a reasonable basis for requesting a Challenge for Credit, such as previous work experience or educational experience for which a credit cannot be obtained directly. The department may designate courses that cannot be challenged. The academic basis of the department's decision is final and cannot be appealed.
- The Challenge for Credit will normally be in the form of a comprehensive examination, but for a course with an accompanying laboratory or project(s) the department may require the demonstration of appropriate skills as a prerequisite to, or as a part of, the Challenge for Credit examination. A Challenge for Credit examination is given at the discretion of, and is administered by, the department.
- The department and instructor concerned will determine the content and format of the Challenge for Credit examination.
- A Challenge for Credit examination will be given at a time arranged by the department, but must be completed and the grade submitted prior to the last date for adding a course for the term in which the particular course is offered.
- Challenge for Credit examinations will be graded as either Pass or Fail. This grade is final and cannot be appealed. If the Challenge for Credit examination is passed, the course will appear on the student's transcript indicating a "P" for pass. Challenge for Credit examination failures will not be recorded on the student's transcript.
- No student may Challenge for Credit a course that appears on the student's transcript. This includes courses assigned a Drop Fail (DF) or Audit status and courses offered at NSAC or courses attempted elsewhere for which a credit would normally have been granted by NSAC. The latter information can be obtained from the Registrar's Office.
- A student currently on Academic Probation or with a Required to Withdraw status may not Challenge for Credit.
- A student may not Challenge for Credit more than once in any course.
- A maximum of six credits may be accumulated by Challenge for Credit.

Dropping Courses

Deadline to Drop a Course Without Penalty

The last day to drop a course without academic penalty is 4:30 pm on the Friday of the seventh week of classes (October 21, 2005 for the Fall semester and February 17, 2006 for the Winter semester).

Drop Failure

A Drop Failure in a course is a grade assigned when a student drops the course at the Registrar's Office after "the last day for dropping a course without academic penalty" and not later than the last day permitted for a Drop Fail. A Drop Fail is counted as a failed subject when determining student standings. When determining averages a Drop Fail is not counted as a course (mark). It is recorded on the transcript as a "DF". Courses with "DF" will not be included in determining full-time status.

Deadline for Drop Fail Status

The last day to declare a Drop Fail status for a course is 4:30 pm on the Friday of the 11th week of classes (November 18, 2005 for the Fall semester and March 24, 2006 for the Winter semester).

If a student is registered for a course after the deadline date indicated for a Drop Fail, the mark earned will be entered on the record regardless of whether or not the examination is written.

Examinations

Examination Regulations

1. No student may leave the examination room until one-half hour after the beginning of the examination.
2. No student may be admitted to the examination room after one-half hour of the time allotted for the examination has passed.
3. Foreign language dictionaries, reported to and approved by the examiner, may be used by students whose native language is not English.
4. A student must not communicate with any other student in any manner whatsoever during the examination period.
5. All texts, handbooks, notes, tables, and other printed or written and loose paper must be deposited with the supervisor in charge of the examination, before the student takes his/her seat, unless provision has been made by the examiner for reference books and materials to be allowed.
6. A student who is found guilty of cheating in any manner by the Faculty Council Judicial Committee may lose credit for the course. The Judicial Committee may apply additional penalties including fines, suspensions, and/or a permanent notice of academic discipline on the student's transcript.

Rereading of an Examination

A student may consult with the instructor for information on and interpretation of the evaluation of his/her examination paper. If the student is not satisfied after consultation, he/she may apply to the Registrar's Office for a reread. The application must be submitted within 30 days of the release of the original mark and be accompanied by a \$100 fee. The fee will be returned if the mark is raised, but will be forfeited if it is not. The reread is to be made by an appropriate person outside the institution and arranged by the head of the department concerned.

Supplemental Examination

Supplemental examinations will no longer be offered as of July 2005.

Deferred Examinations

A deferred examination is permitted only on extreme compassionate grounds and requires proper certification. Unless the student presents a further certification, each deferred examination must be written within two weeks of the day on which the regular examination in the course was scheduled. Permission to defer an exam and arrangements for the specific time and place of writing are to be made by the Registrar in conjunction with the instructor involved.

Grades

Basis of Marking

The evaluation of a course may be based on tests, laboratory exercises, other assignments and examinations, and attendance. In determining a final mark, instructors will take into consideration the total work of the course. The evaluation used by one instructor will not necessarily be the one used by another.

At the beginning of each course, professors are required to indicate to students, in writing, the attendance requirements and the workload for the course, together with the appropriate dates and values of tests, term papers, quizzes, other assignments, and final examinations. No credit is given for a course unless all requirements for it have been completed.

Grade Appeals

Wherever possible, the student should resolve differences over assigned grades with the course instructor. After consultation with the instructor, the student may still wish to appeal the grade. The appeal must be submitted in writing to the Registrar, along with the \$25 non-refundable fee, after release of final marks and not later than 30 days after the release of final marks. The Registrar may waive the 30-day deadline in exceptional circumstances.

Appeals of grades will be considered by a committee convened by the Registrar and consisting of the Vice-President Academic, the Department Head, the Chair of the Standards and Admissions Committee, and one member of Faculty Council selected by the student. In the case where one of the committee members is the instructor of the course in question, the Vice-President Academic will appoint an alternate. The committee will consider written submissions from the student and the instructor, and may request to meet with either of them. An appeal may be based on questions of process or content. In the case of the latter, any grade changes must be based on a reread. If the committee does not recommend a reread, the student may ask for one. In that case the student must pay a \$100 fee, which will be refunded if the resulting grade is higher. Grades resulting from rereads may be higher or lower than the original grade and are final. The Department Head for the course in question will recommend to the appeals committee an external person or persons who will be selected to conduct the reread. In the case where the Department Head is the instructor of the course in question, the Vice-President Academic will recommend the external reader to the committee.

All decisions of the grades appeals committee are final. In the case where a grade is changed, the instructor will be provided with a written explanation for the change.

Release of Final Grades

Official records of grades, transcripts, degrees, or diplomas will be withheld pending full payment of all outstanding balances owing to the College.

Graduation

Application for Graduation

Students intending to graduate in May must submit an "Application to Graduate" to the Registrar by the previous December 15. Applications are available at the Registrar's Office.

Late Application for Graduation Fee

An application to graduate that is submitted after December 15 must be accompanied by a \$50 Late Fee.

Graduation Requirements

Graduands may opt to fulfill the program requirements in place at the time they entered the program or those in place at the time of graduation. The graduand must completely satisfy the syllabus he/she chooses. In the event that courses are no longer offered, the College will prescribe appropriate substitutes.

Diplomas Granted in Absentia

Unless the Registrar has been notified 24 hours prior to the commencement of graduation exercises that a candidate for graduation is to be absent, a fee of \$10 must be paid to the Registrar's Office before a diploma is released.

Academic Residency Requirements**B.Sc.(Agr.)**

Students intending to graduate with a B.Sc.(Agr.) must successfully complete a minimum of 15 semester courses at NSAC, including 6 of the last 10 required courses.

B.Tech

Students intending to graduate with a B.Tech must successfully complete a minimum of 15 semester courses at NSAC, including 6 of the last 10 required courses.

Engineering Diploma

Students intending to graduate with an Engineering Diploma must successfully complete a minimum of 11 courses at NSAC, including 6 of the last 10 required courses.

Technical Diploma

Students intending to graduate with a Technical Diploma must successfully complete a minimum of one-half of the total required courses at NSAC, including 7 of the last 12.

Transfer Credits for Technical Graduates Admitted to the NSAC B.Sc.(Agr.) Program

Students who have graduated from an NSAC Technical diploma program, and who have been admitted to the NSAC B.Sc.(Agr.) program, shall be awarded a minimum of 10 credits toward the NSAC B.Sc.(Agr.) program, provided all other program requirements are met.

Applicants with Technical diplomas from other institutions will be evaluated on a case-by-case basis, and these applicants will normally be awarded the 10-course minimum if their technical program matches one of those offered by NSAC.

Minimum Cumulative Average Requirements for the B.Sc.(Agr.), B.Tech, and B.Eng.

Students are required to have a minimum cumulative average of 60% in all courses required for the program in order to graduate. Courses transferred from other institutions are not normally considered in calculating the cumulative average.

Standing on Graduation (in effect until August 2006)**With High Honours**

Cumulative average of 80% or higher

With Honours

Cumulative average of 75–79%

Standing on Graduation (effective September 2006)

With High Honours

Cumulative average of 90% or higher

With Honours

Cumulative average of 80-89.9%

Second Diploma

The minimum requirement for a second Technical diploma is 12 additional courses that include all of the required courses of the syllabus.

Advanced Standing

Students who successfully complete a Technical diploma program at NSAC and apply to the B.Sc.(Agr.) program will receive a minimum of 10 credits towards their degree.

Health Insurance Requirements

Students not covered by a Canadian provincial health insurance plan (i.e. those who are not Canadian citizens) are required to purchase a health insurance policy through the College. Once admitted, the student will be registered for coverage effective their date of arrival in Canada. The charge will be included on each student's account. Other insurance policies from home countries will not be accepted. Canadian students may also purchase an extended health insurance policy. Information may be obtained in Student Services.

Students who participate in varsity athletics are covered by a "sport" insurance policy. Details can be obtained through the Athletic Department.

Specific programs of study may require additional health and accident coverage.

It is the students' responsibility to ensure that they have adequate health and accident insurance. The College does not accept any responsibility for costs related to accident or sickness for students participating in programs of study, athletic, or College-related events.

The College strongly recommends that all students obtain additional health and accident insurance above and beyond that available through provincial health insurance plans.

Permission to take Courses Elsewhere

NSAC students wishing to enrol in courses at other institutions for credit in an NSAC program must obtain, in advance, a Letter of Permission from the Registrar.

Courses that are taken without a Letter of Permission will not be credited towards a student's program.

Letter of Permission forms are available at the Registrar's Office.

Plagiarism

Copying someone else's work without giving him/her credit is plagiarizing.

The most common form of plagiarism is simply to copy word for word from a book, article or Internet site, omitting quotation marks and any mention of the original author.

A slightly more subtle form of plagiarism occurs when a writer's ideas are used by someone trying to pass them off as their own. Admittedly, in this second case, exact words used by the original writer may not be copied, but the essence of what the original writer wrote is. Therefore, it is plagiarism.

The fact that one is not copying from printed, published sources does not absolve one from the charge of plagiarism. One may be justly accused and convicted of it by copying unpublished term papers, essays, assignments, reports (including laboratory reports), and collections.

President's List

The top 10 percent of students within each program of study (Degree, Engineering, Technician, Technology) will be included on the President's List. These students must have an average of 80% or higher, have been enrolled in four or more courses, and have no failures (including Drop Fails).

Readmission

Former students of NSAC must complete an Application for Admission to be readmitted.

Students who have been Academically Dismissed (required to withdraw) from NSAC must apply to the Registrar for readmission. Applications for readmission will be considered on an individual basis. Applications must be accompanied by a letter outlining the factors that accounted for poor academic performance and explaining why the applicant feels ready to commence studies again.

Registration

Computerized Registration

NSAC uses Datatel's Colleague Student Information System (SIS) to enable students to register for courses via the web from anywhere in the world. Once students have paid their registration deposit, they will be issued a Permit to Register which includes login information (Username and Password) and instructions on how to register using this system.

Course Registrations

It is the responsibility of the student to ensure that he/she is properly registered in courses. Students will receive credit only for courses in which they are registered by the deadline to add courses. Conversely, a student who does not properly withdraw from a course will receive a mark of "0" for that course and will be responsible for all tuition fees. Deadlines for adding and dropping courses are strictly enforced.

Prerequisites

Students may be removed from courses for which they do not have prerequisites. Prerequisite waivers can be granted only by the instructors and must be submitted in writing, with the instructor's signature, to the Registrar.

Residence

Residence Regulations are to be found in the NSAC Student Handbook under Community Standards, and in the Residence Handbook, available at www.nfac.nfac.ca/stuserv/

Student Safety

Students must comply with all safety requirements of the College. This includes safety rules specific to programs and courses.

Student Status

Scholarship students are normally required to be enrolled in four or more courses per semester.

Full-time

Students who are taking three or more credit courses in a semester, are registered in a program, and have ongoing status are full-time students.

Part-time

Students who are taking fewer than three courses, are registered in a program, and have ongoing status are part-time students.

Visiting

Students who are admitted to one or more courses on the basis of a Letter of Permission from another bona fide postsecondary institution are visiting students. Visiting students do not have ongoing student status. That is, if they wished to enrol for another semester they would be required to go through the application for admission process again.

Unclassified

Students who are admitted to one course only with permission of the Registrar and instructor, are not registered in a program of study, and do not have ongoing student status are unclassified students.

No Program

Students may be admitted to one or more courses on a “no-program” basis. Admission is to specified courses on a case-by-case basis. No-program students do not have ongoing student status.

Scholarship students are normally required to be enrolled in four or more courses per semester.

Transcripts

No transcript will be sent to any other institution, business, etc., without the student’s authorization in writing.

Withdrawal

Students who wish to withdraw from NSAC must notify the Registrar’s Office. Students will not be able to withdraw from all their courses using the Student Information System after the first two weeks of classes and must do this in person at the Registrar’s Office. At the time of withdrawal, the student must return the Student ID Card.

Late Withdrawal

Students who withdraw from the College after the last date for declaring a Drop Failure, unless due to illness or other compelling compassionate reasons, will not be admitted the following semester.

Explanation of Terms and Codes

Each course is described by an alpha-numeric code. The alpha prefix identifies the main subject area, and the following digits identify the specific course.

Courses numbered 1000 or higher are taken for degree credit courses. Numbers up to 0999 are offered in Technical programs. Numbers up to 0099 are offered as non-degree requirements. Numbers 5000+ are offered in the Graduate Program.

Courses with an 'A' designation focus on one or more aspects of the agri-food system. The agri-food system includes production, management, processing, and marketing of crops and livestock and their products. Other courses may use agricultural examples, but are not designated 'A' because their main focus is not on the agri-food system.

Some first-year core courses are offered by distance delivery in addition to or instead of traditional delivery. These courses are denoted by DE. For information on distance courses see page 11.

Program Codes

BSCAG Degree (B.Sc.(Agr.))
BTECH Bachelor of Technology (B.Tech)
ENG Engineering
MSC Masters
TN Technician
TY Technology

Degree

Major

AB Agricultural Business

AQ Aquaculture

AS Animal Science

BSM Bio-Environmental Systems
Management

AEC Agricultural Economics

EV Environmental Sciences

PS Plant Science

PV Pre-Veterinary

NP No Program, University

Minor

AB Agricultural Business

AC Agricultural Chemistry

AS Animal Science

AEC Agricultural
Economics

EV Environmental
Sciences

PM Pest Management

PS Plant Science

Bachelor of Technology

APS Applied Science

EH Environmental
Horticulture

Engineering

ENG Engineering

Technician

Major

AB Agricultural Business

AS Animal Science

Specialization

AE Agricultural
Engineering

AS Animal Science

PS Plant Science

Technology

Major

AH Animal Health

AT Agricultural Technology

EH Environmental Horticulture

FT Farming Technology

PS Plant Science

Specialization

AGR Agronomy

ED Edible Horticulture

OH Ornamental
Horticulture

Undergraduate Degree Program

General Information

Bachelor of Technology

The Bachelor of Technology (B.Tech) is awarded in association with Dalhousie University. It is a four-year program designed to provide a comprehensive study of specific areas of technology. Graduates of this program will have mastered a number of skills necessary to address present and future advances in technology associated with specific career paths. A balance of communication and technical skills will be achieved.

All majors in the program have an admission requirement of at least two years of postsecondary studies. The majors are designed to provide advanced studies for NSAC diploma graduates and require many of the elements of these programs as a foundation. Applicants from other postsecondary programs will be assessed and may be required to take some qualifying courses upon admission. Each major has specific entrance requirements, and possession of minimum requirements does not guarantee admission.

Bachelor of Science in Agriculture and Degree Diploma in Engineering

The Nova Scotia Agricultural College in association with Dalhousie University offers a four-year (40-course) program leading to a degree in Agricultural Science, B.Sc.(Agr.). The first two years

of a four-year program in various disciplines are offered, including an engineering discipline and a two-year pre-veterinary program.

Students in Engineering at NSAC who successfully complete the prescribed 22 courses and have the required Cumulative Grade Average are granted an Engineering Diploma.

Engineering students who complete the two-year Engineering Diploma program are admitted directly into the third year of the engineering program at Dalhousie University. Those who elect the Biosystems (Agricultural) or Environmental Engineering disciplines at Dalhousie University, which are sponsored jointly by Dalhousie and NSAC, may elect to complete them as co-op programs.

The Pre-Veterinary program also serves as the first two years of the B.Sc.(Agr.) program, any major.

NSAC students in the Agricultural Sciences who successfully complete the prescribed courses and number of credits with a Cumulative Grade Average at or above the minimum required (60%), and who are in good standing, will be granted the degree of Bachelor of Science in Agriculture, B.Sc.(Agr.).

Until August 2006 a High Honours diploma will be awarded to all graduates of degree programs who have taken 20 or more courses at NSAC and have achieved a Cumulative Grade Average of 80% or better. An Honours diploma will be awarded to graduates achieving a Cumulative Grade Average of between 75% and 79%. Effective September 2006 a High Honours diploma will be awarded to all graduates of degree programs who have taken 20 or more courses at NSAC and have achieved a Cumulative Grade Average of 90% or better. An Honours diploma will be awarded to graduates achieving an Cumulative Grade Average of between 80 and 89.9%.

Professional Organizations for Agrologists and Engineers

Agrology is “the profession of applying science and scientific principles to the business and art of agriculture”. University graduates who are skilled in the science and business of agriculture are encouraged to join their provincial Institute of Agrologists. Provincial Institutes offer the opportunity to get to know and exchange ideas with other professional agrologists in the province and other parts of Canada through membership in the Agricultural Institute of Canada. Membership in an Institute of Agrologists provides an element of fellowship in the profession and the opportunity to attend scientific conferences and educational tours, and to receive newsletters and technical publications. Membership in an Institute is required by provincial statute to practice agrology in most provinces.

The practice of engineering in Canada is governed by independent and autonomous provincial and territorial associations of Professional Engineers, which serve as licensing bodies for the profession. Each association has been established under a Professional Engineering Act adopted by its provincial or territorial legislature. The Canadian Council of Professional Engineers (CCPE) is the national federation of those associations of Professional Engineers and

assists them in coordinating and standardizing their work. One such standardization is the accreditation of all Canadian engineering programs to ensure that the academic content and teaching facilities are acceptable to allow graduates admission into all provincial and territorial associations.

Bachelor of Science in Agriculture

The B.Sc.(Agr.) is a four-year (40-course) program, designed to provide a sound education in the science of agriculture. Graduates of this program meet the formal educational requirements for Professional Agrologists in the provincial Institutes of Agrologists of the Atlantic Provinces.

Normally, students select a Major during their first year at NSAC and continue in that field of study until they graduate.

Majors Offered at NSAC

Agricultural Business

Agricultural Economics

Animal Science

Aquaculture

Bio-Environmental Systems Management

Environmental Sciences

Plant Science

Minors Offered at NSAC

Agricultural Business

Agricultural Chemistry

Agricultural Economics

Animal Science

Environmental Sciences

Pest Management

Plant Science

Syllabus

All Majors

Year 1

Semester I

AGRI1000 (IN100) Agricultural Ecosystems (A) DE

BIOL1000 (B100) Botany

CHEM1000 (CS101) General Chemistry I

ECON1000 (EB110) Principles of Microeconomics* (A) DE

MATH1000 (MP100) Calculus & Analytic Geometry I

Semester II

BIOL1001 (B110)	Zoology
CHEM1001 (CS102)	General Chemistry II
ECON1000 (EB110)	Principles of Microeconomics* (A) DE
MATH1001 (MP105)	Calculus & Analytic Geometry II
	Elective**

and one of:

ENGL1000 (H113)	Composition
ENGL1001 (H101)	The Novel
ENGL1002 (H102)	Nature in English and American Literature
GEOG1000 (H170)	Introductory Human Geography
SOCI1000 (H160)	Introductory Sociology

* ECON1000 (EB110): Principles of Microeconomics can be taken in either semester and should be alternated with the choice of ENGL1000 (H113), ENGL1001 (H101), ENGL1002 (H102), GEOG1000 (H170), or SOCI1000 (H160).

**Students planning to major in Agricultural Business or Agricultural Economics may wish to select ECON1001 Principles of Macroeconomics.

Required Courses Past the First Year (required of all students)

STAT2000 (MP210)	Introduction to Statistics
RESM4XXX*	Project-Seminar I (A)
RESM4XXX*	Project-Seminar II (A)

plus two Humanities electives, one of which must be at the 3000 or 4000 level.

* RESM4XXX: Project-Seminar I and RESM4XXX: Project-Seminar II represent the Project-Seminar courses, including RESM4004 (EB425). Students may take their Project-Seminar courses from any department, but the research topic must be approved by the head of the department responsible for the major in which they are registered.

DE indicates that the course is offered by Distance Education in addition to or instead of by traditional methods of delivery.

Students must complete 12 'A' (Agricultural) courses to be awarded the B.Sc.(Agr.). There are four 'A' courses in the College Core (including first year).

Courses with an 'A' designation focus on one or more aspects of the agri-food system. The agri-food system includes production, management, processing, and marketing of crops and livestock and their products. Other courses may use agricultural examples, but are not designated 'A' because their main focus is not on the agri-food system.

The purpose of the project-seminar course sequence in the College Core is to give each student the opportunity to pursue independent research in the area of his/her interest. Each student will gain hands-on experience as well as experience in the preparation, design, and analysis of a project in written and oral formats.

Agricultural Business

In addition to the B.Sc.(Agr.) core, students must take the following courses to meet the requirements of this program:

Major

ECON1001 (EB255)	Principles of Macroeconomics
ECON2000 (EB200)	Intermediate Microeconomics
ECON2002 (EB220)	Production Economics (A)
ECON3000 (EB260)	Mathematical Economics
ECON3002 (EB320)	Agricultural and Food Policy (A)
ECON3003 (EB325)	Mathematical Programming
MGMT2002 (EB335)	Marketing
MGMT2003 (EB340)	Farm Management (A)
MGMT2004 (EB210)	Financial Accounting I
MGMT2005 (EB215)	Financial Accounting II
MGMT3000 (EB315)	Management Accounting
MGMT4000 (EB410)	Strategic Management
MGMT4001 (EB445)	Advanced Entrepreneurship (A)

STAT3000 (MP211) Intro. to Planned Studies: Surveys and Experiments

Electives must include four 'A' courses.

Minor

A minimum of six courses including:

MGMT2002 (EB335)* Marketing

MGMT2003 (EB340)* Farm Management (A)

MGMT2004 (EB210)* Financial Accounting I

and three of the following**:

ECON1001 (EB255) Principles of Macroeconomics

ECON2000 (EB200) Intermediate Microeconomics

ECON2001 (EB305) Intermediate Macroeconomics

ECON3002 (EB320) Agricultural and Food Policy (A)

ECON4002 (EB441) Topics in Advanced Farm Management (A)

MGMT2001 (EB230) Introduction to Business Law

MGMT2005 (EB215) Financial Accounting II

MGMT3000 (EB315) Management Accounting

MGMT3001 (EB430) International Marketing

MGMT3002 (EB435) Consumer Behaviour

MGMT4000 (EB410) Strategic Management

MGMT4001 (EB445) Advanced Entrepreneurship (A)

SPEC2000 (EB221)*** Topics in Economics and Business Management (A)

SPEC4005 (EB421)*** Special Topics in Agric. Economics and Business I (A)

SPEC4006 (EB422)*** Special Topics in Agric. Economics and Business II (A)

* If this course is required for a student's major, then the student must substitute another course from the above list.

** Students cannot select courses which are required for their major.

*** Topics must relate to agricultural business.

Recommended Syllabus for a Major in Agricultural Business

Year 2

Semester III

ECON2000 (EB200) Intermediate Microeconomics

MGMT2004 (EB210) Financial Accounting I

STAT2000 (MP210) Introduction to Statistics

Elective

Elective

Semester IV

ECON1001 (EB255) Principles of Macroeconomics I*

ECON2002 (EB220) Production Economics (A)

MGMT2005 (EB215) Financial Accounting II

STAT3000 (MP211) Intro to Planned Studies: Surveys & Experiments

Elective

Year 3

Semester V

ECON3000 (EB260) Mathematical Economics

MGMT2002 (EB335) Marketing

MGMT2003 (EB340) Farm Management (A)

MGMT3000 (EB315) Management Accounting

Elective

Semester VI

ECON3002 (EB320) Agricultural & Food Policy (A)

ECON3003 (EB325) Mathematical Programming

Elective

Elective

Elective

Year 4

Semester VII

MGMT4000 (EB410) Strategic Management

RESM4004 (EB425) Research Methods for Economics & Business (A)

Elective

Elective

Elective

Semester VIII

MGMT4001 (EB445) Advanced Entrepreneurship (A)

RESM4005 (EB450) Project-Seminar for Economics & Business (A)

Elective

Elective

Elective

Electives must include two Humanities courses, one of which must be at the 3000 or 4000 level, and four 'A' courses. (See page 176 for a list of courses and their designations.)

Agricultural Economics

In addition to the B.Sc.(Agr.) core, students must take the following courses to meet the requirements of this program:

Major

ECON1001 (EB255)	Principles of Macroeconomics
ECON2000 (EB200)	Intermediate Microeconomics
ECON2001 (EB305)	Intermediate Macroeconomics
ECON3000 (EB260)	Mathematical Economics
ECON3002 (EB320)	Agricultural and Food Policy (A)
ECON3003 (EB325)	Mathematical Programming
ECON3004 (EB330)	Agricultural Markets and Prices (A)
ECON3005 (EB360)	Econometrics
ECON4001 (EB419)	Agri-food Policy Analysis (A)
MGMT2002 (EB335)	Marketing
MGMT2003 (EB340)	Farm Management (A)
MGMT2004 (EB210)	Financial Accounting I

Electives must include four 'A' courses.

Minor

A minimum of six courses including:

ECON2000* (EB200)	Intermediate Microeconomics
ECON3000* (EB260)	Mathematical Economics

and four of the following**:

ECON1001 (EB255)	Principles of Macroeconomics
ECON2001 (EB305)	Intermediate Macroeconomics
ECON2002 (EB220)	Production Economics (A)
ECON3001	Environmental Economics
ECON3002 (EB320)	Agricultural and Food Policy (A)

ECON3003 (EB325)	Mathematical Programming
ECON3004 (EB330)	Agricultural Markets and Prices (A)
ECON3005 (EB360)	Econometrics
ECON4000	Advanced Microeconomics
ECON4001 (EB419)	Agri-food Policy Analysis (A)
ECON4002 (EB441)	Topics in Advanced Farm Management (A)
ECON4003	Resource Economics
MGMT2003 (EB340)	Farm Management (A)
SPEC2000 (EB221)***	Topics in Economics and Business Management (A)
SPEC4005 (EB421)***	Special Topics in Agricultural Economics and Business I (A)
SPEC4006 (EB422)***	Special Topics in Agricultural Economics and Business II (A)

* If this course is required for a student's major, then the student must substitute another course from the above list.

** Students cannot select courses which are required for their major.

*** Topics must relate to Agricultural Economics.

Recommended Syllabus for a Major in Agricultural Economics

Year 2

Semester III

ECON2000 (EB200)	Intermediate Microeconomics
MGMT2004 (EB210)	Financial Accounting I
STAT2000 (MP210)	Introduction to Statistics or Elective Elective Elective

Semester IV

ECON1001 (EB255)	Principles of Macroeconomics*
ECON3004 (EB330)	Agricultural Markets & Prices (A)
STAT2000 (MP210)	Introduction to Statistics or Elective
	Elective
	Elective

Year 3

Semester V

ECON2001 (EB305)	Intermediate Macroeconomics*
ECON3000 (EB260)	Mathematical Economics
ECON3005 (EB360)	Econometrics
MGMT2002 (EB335)	Marketing
MGMT2003 (EB340)	Farm Management (A)

Semester VI

ECON3002 (EB320)	Agricultural and Food Policy (A)
ECON3003 (EB325)	Mathematical Programming
	Elective
	Elective
	Elective

Year 4

Semester VII

ECON4001 (EB419)	Agri-food Policy Analysis (A)
RESM4004 (EB425)	Research Methods for Economics & Business (A)
	Elective
	Elective
	Elective

Semester VIII

RESM4005 (EB450)	Project-Seminar for Economics & Business (A)
	Elective
	Elective
	Elective
	Elective

* Students who successfully complete ECON1001 (EB255) Principles of Macroeconomics in their first year as an elective may be able to select ECON2001 (EB305) Intermediate Macroeconomics in the third semester of their second year.

STAT2000 (MP210) should be completed in Semester III or IV. STAT2000 (MP210) is a prerequisite to ECON3005 (EB360).

Electives must include two Humanities courses, one of which must be at the 3000 or 4000 level, and four 'A' courses. (See page 176 for a list of courses and their designations.)

Animal Science

In addition to the B.Sc.(Agr.) core, students must take the following courses to meet the requirements of this program:

Major

ANSC2000 (AS200)	Animal Agriculture I (A)
ANSC2001 (AS201)	Animal Agriculture II (A)
ANSC3000 (AS310)	Animal Breeding (A)
BIOL2006 (AS230)	Mammalian Physiology
BIOL3008 (AS330)	Growth, Reproduction, and Lactation (A)
CHEM2000 (CS201)	Organic Chemistry I
CHEM3001 (CS302)	Biochemical Pathways
GENE2000 (B240)	Genetics I
NUTR3000 (AS305)	Animal Nutrition

PHYS1002 (MP140) Physics I or PHYS1000 (MP150)

Physics for Life Sciences I

plus

two Animal Science courses at the 3000 or 4000 level

one Animal Science course at the 4000 level (RESM4002 (AS449) and RESM4003 (AS450) cannot be used)

(These three must be 'A' courses.)

Minor

Any six courses approved by the Animal Science Department Program Advisor. The content of the minor will be decided on a student-by-student basis. Students cannot select courses which are required for their major or the College core. Students wishing to take fourth-year module courses (ANSC4000, ANSC4001 (AS490) series) should note that prerequisite courses must be completed prior to enrolment.

Recommended Syllabus for a Major in Animal Science

Year 2

Semester III

ANSC2000 (AS200) Animal Agriculture I (A)

CHEM2000 (CS201) Organic Chemistry I

GENE2000 (B240) Genetics I

PHYS* or Elective

Elective

Semester IV

BIOL2006 (AS230) Mammalian Physiology

CHEM3001 (CS302) Biochemical Pathways

PHYS* or Elective

Elective

Elective

Year 3

Semester V

ANSC2001 (AS201) Animal Agriculture II (A)

BIOL3008 (AS330) Growth, Reproduction & Lactation (A)

NUTR3000 (AS305) Animal Nutrition

Elective

Elective

Semester VI

ANSC3000 (AS310) Animal Breeding (A)

RESM4002 (AS449) Project-Seminar I (A)

Elective

Elective

Elective

Year 4

Semester VII

RESM4003 (AS450) Project-Seminar II (A)

Elective

Elective

Elective

Elective

Semester VIII

Elective

Elective

Elective

Elective

Elective

PHYS* – Students must complete the combination of PHYS1000 (MP150) or PHYS1002 (MP140) and STAT2000 (MP210) in Semesters III & IV. If PHYS1000/PHYS1002 (MP150/MP140) is done in Semester III, then STAT2000 (MP210) will be done in Semester IV. If STAT2000 (MP210) is done in Semester III, then PHYS1002 (MP140) will be done in Semester IV.

Electives must include two Humanities courses, one of which must be at the 3000 or 4000 level; two 3000- or 4000-level Animal Science courses; and one 4000-level Animal Science course. Overall four “A” electives are required. (See page 176 for a list of courses and their designations.)

Aquaculture

In addition to the B.Sc.(Agr.) core, students must take the following courses to meet the requirements of this program:

Major

ANSC3000 (AS310)	Animal Breeding (A)
AQUA2000 (AS210)	Introduction to Aquaculture (A)
AQUA3000 (AS370)	Fish Health (A)
AQUA4000 (AS440)	Finfish Production or
AQUA4001 (AS445)	Shellfish Production
BIOL3005 (AS380)	Physiology of Aquatic Animals (A)
BIOL3006 (AS375)	Aquatic Ecology
CHEM2000 (CS201)	Organic Chemistry I
CHEM3001 (CS302)	Biochemical Pathways
ENGN2004 (AE215)	Aquacultural Environment (A)

ENGN3013 (AE360)	Aquacultural Engineering (A)
GENE2000 (B240)	Genetics I
MGMT2003 (EB340)	Farm Management (A)
MICR2000 (B225)	Microbiology
NUTR3000 (AS305)	Animal Nutrition or
NUTR3002 (AS365)	Fish Nutrition (A)
PHYS1000 (MP150)	Physics for Life Sciences I or
PHYS1002 (MP140)	Physics I

and one of:

ECON4002 (EB441)	Topics in Advanced Farm Management (A)
MGMT1000 (EB225)	Small Business Entrepreneurship
MGMT2002 (EB335)	Marketing
MGMT2004 (EB210)	Financial Accounting I

Recommended Syllabus for a Major in Aquaculture

Year 2

Semester III

AQUA2000 (AS210)	Introduction to Aquaculture (A)
CHEM2000 (CS201)	Organic Chemistry I
GENE2000 (B240)	Genetics I
PHYS* or	Elective
	Elective

Semester IV

CHEM3001 (CS302)	Biochemical Pathways
ENGN2004 (AE215)	Aquacultural Environment (A)
MICR2000 (B225)	Microbiology

PHYS* or Elective

Elective

Year 3

Semester V

BIOL3005 (AS380) Physiology of Aquatic Animals (A)

BIOL3006 (AS375) Aquatic Ecology

MGMT2003 (EB340) Farm Management (A)

NUTR3000 (AS305) Animal Nutrition or Elective

Elective

Semester VI

ANSC3000 (AS310) Animal Breeding (A)

AQUA3000 (AS370) Fish Health (A)

ENGN3013 (AE360) Aquacultural Engineering (A)

NUTR3002 (AS365) Fish Nutrition (A) or Elective

RESM4010 (AS449) Aquaculture Project-Seminar I (A)

Year 4

Semester VII

AQUA4000 (AS440) Finfish Production or Elective

RESM4011 (AS450) Aquaculture Project-Seminar II (A)

Elective

Elective

Elective

Semester VIII

AQUA4001 (AS445) Shellfish Production or Elective
Elective
Elective
Elective
Elective

PHYS* – Students must complete the combination of PHYS1000 (MP150) or PHYS1002 (MP140) and STAT2000 (MP210) in Semesters III & IV. If PHYS1000/1002 is done in Semester III, then STAT2000 will be done in Semester IV. If STAT2000 is done in Semester III, then PHYS1000/1002 will be done in Semester IV.

Electives must include two Humanities courses, one of which must be at the 3000 or 4000 level (see page 176 for a list of courses and their designations), and one of the following:

ECON4002 (EB441) Topics in Advanced Farm Management (A)
MGMT1000 (EB225) Small Business Entrepreneurship
MGMT2002 (EB335) Marketing
MGMT2004 (EB210) Financial Accounting

Bio-Environmental Systems Management

In addition to the B.Sc.(Agr.) core, students must take the following courses to meet the requirements of this program:

Major

ENGN1003 (AE120) Properties and Mechanics of Materials
ENGN2000 (AE200) Environmental Impacts and Resource Management (A)
ENGN2001 (AE202) Agricultural Machinery
ENGN2002 (AE204) Introduction to Systems Analysis
ENGN2003 (AE207) Food Processing Systems (A)

ENGN2006 (AE260)	Surveying
ENGN3001 (AE305)	Engineering Measurements and Controls (A)
ENGN3003 (AE311)	Technology for Precision Agriculture
ENGN3007 (AE320)	Structures and Their Environment (A)
ENGN3009 (AE335)	Materials Handling and Processing (A)
ENGN3010 (AE340)	Soil and Water (A)
ENGN4000 (AE410)	Water and Water Quality Management (A)
ENGN4002 (AE420)	Management of Mechanized Agricultural Systems (A)
MGMT2003 (EB340)	Farm Management (A)
MGMT2004 (EB210)	Financial Accounting I
PHYS1000 (MP150)	Physics for Life Sciences I or
PHYS1002 (MP140)	Physics I

Recommended Syllabus for a Major in Bio-Environmental Systems Management

Year 2

Semester III

ENGN2002 (AE204)	Introduction to Systems Analysis
ENGN2006 (AE260)	Surveying
MGMT2004 (EB210)	Financial Accounting I
PHYS* or	Elective
	Elective

Semester IV

ENGN1003 (AE120)	Properties and Mechanics of Materials
ENGN2001 (AE202)	Agricultural Machinery
PHYS* or	Elective
	Elective1

Elective

Year 3

Semester V

- ENGN3007 (AE320) Structures and Their Environment (A)
- ENGN3009 (AE335) Materials Handling and Processing (A)
- ENGN3010 (AE340) Soil and Water (A)
- MGMT2003 (EB340) Farm Management (A)

Elective

Semester VI

- ENGN2003 (AE207) Food Processing Systems (A)
- ENGN3001 (AE305) Engineering Measurements & Controls (A)
- RESM4000 (AE449) Bio-Environmental Systems Management Project-
Seminar I (A)
- Elective2
- Elective

Year 4

Semester VII

- ENGN2000 (AE200) Environmental Impacts and Resource Management (A)
- ENGN3003 (AE311) Technology for Precision Agriculture
- RESM4001 (AE450) Bio-Environmental Systems Management Project-
Seminar II (A)
- Elective
- Elective

Semester VIII

- ENGN4000 (AE410) Water and Water Quality Management (A)
- ENGN4002 (AE420) Management of Mechanized

Agricultural Systems (A)

Elective

Elective

Elective

PHYS* – Students must complete the combination of PHYS1000 (MP150) or PHYS1002 (MP150) and STAT2000 (MP210) in Semesters III & IV. If PHYS1000/PHYS1002 is done in Semester III then STAT2000 will be done in Semester IV. If STAT2000 is done in Semester III, then PHYS1000/1002 will be done in Semester IV.

Electives must include two Humanities courses, one of which must be at the 3000 or 4000 level. CMMT3000 Communication Theory and Skills and EXTE3000 (H320) Extension Education in the Rural Community or EXTE3001 (H321) Leadership Development and the Social Action Process are recommended. (See page 176 for a list of courses and their designations.)

1 strongly recommend MGMT2000 (H140) Human Resource Management

2 strongly recommend ENGN2004 (AE215) Aquacultural Environment

Recommended Electives:

CHEM2000 (CS201)	Organic Chemistry I
CSCI1000 (MP222)	Computer Methods
ECON2000 (EB200)	Intermediate Microeconomics
ECON3001	Environmental Economics
ECON3002 (EB320)	Agricultural and Food Policy (A)
ECON4003	Resource Economics
ENGN3013 (AE360)	Aquacultural Engineering (A)
ENGN4001 (AE412)	Water Quality Issues (A)
MATH4000 (MP460)	Agricultural Modelling
MGMT2002 (EB335)	Marketing
MGMT4000 (EB410)	Strategic Management

SPEC4012 (AE415)	Directed Studies in Agricultural Engineering (A)
STAT3000 (MP211)	Intro to Planned Studies: Surveys and Experiments

Environmental Sciences

In addition to the B.Sc.(Agr.) core, students must take the following courses to meet the requirements of this program:

Major

BIOL3001 (B330)	Ecology
CHEM2000 (CS201)	Organic Chemistry I
CHEM3001 (CS302)	Biochemical Pathways
ECON2000 (EB200)	Intermediate Microeconomics
ECON3001	Environmental Economics
ENGN4000 (AE410)	Water and Water Quality Management (A)
ENVS2000 (ES200)	Environmental Studies I (A)
ENVS2001 (ES201)	Environmental Studies II (A)
ENVS3001 (ES330)	Environmental Sampling and Analysis
ENVS3002 (ES333)	Waste Treatment and Site Remediation (A)
MICR2000 (B225)	Microbiology
PHYS1002 (MP140)	Physics I or
PHYS1000 (MP150)	Physics for the Life Sciences I
SOIL2000 (CS220)	Introduction to Soil Science (A)
STAT3000 (MP211)	Introduction to Planned Studies: Surveys and Experiments

plus one of the following two courses:

CHEM3009 (ES312)	Environmental Chemistry
ENGN2000 (AE200)	Environmental Impacts & Resource Management (A)

Note: Electives must include three 'A' courses (only two 'A' courses if ENGN2000 (AE200) is taken).

Within the Environmental Sciences major students may select any one of the following areas of specialization:

Environmental Biology

Environmental Chemistry

Environmental Economics

Environmental Soil Science

Pest Management

Waste Management

Interested students are to consult with the Program Advisor.

Minor

Students intending to declare a minor in Environmental Sciences require a minimum of five courses including ENVS2000 (ES200) and ENVS2001 (ES201) plus three other courses approved by the Department of Environmental Sciences. Students may not select courses which are required for their major.

Recommended Syllabus for a Major in Environmental Sciences

Year 2

Semester III

CHEM2000 (CS201)	Organic Chemistry I
ECON2000 (EB200)	Intermediate Microeconomics
ENVS2000 (ES200)	Environmental Studies I (A)
SOIL2000 (CS220)	Introduction to Soil Science (A)

STAT2000 (MP210) Introduction to Statistics

Semester IV

CHEM3001 (CS302) Biochemical Pathways

ENVS2001 (ES201) Environmental Studies II (A)

MICR2000 (B225) Microbiology

STAT3000 (MP211) Intro to Planned Studies: Surveys and Experiments

Elective

Year 3

Semester V

BIOL3001 (B330) Ecology

ECON3001 Environmental Economics

ENVS3001 (ES330) Environmental Sampling and Analysis

PHYS1000 (MP150)* Physics for the Life Sciences I or

PHYS1002 (MP140)* Physics I or

Elective

Elective

Semester VI

CHEM3009 (ES312) Environmental Chemistry or Elective

ENGN4000 (AE410) Water and Water Quality Management (A)

ENVS3002 (ES333) Waste Treatment and Site Remediation (A)

PHYS1000 (MP150)* Physics for the Life Sciences I or

PHYS1002 (MP140)* Physics I or

Elective

Elective

Year 4

Semester VII

ENGN2000 (AE200)	Environmental Impacts and Resource Management (A) or Elective
RESM4006 (ES449)	Environmental Sciences Project-Seminar I (A) Elective Elective Elective

Semester VIII

CHEM3009 (ES312)	Environmental Chemistry or Elective
RESM4007 (ES450)	Environmental Sciences Project-Seminar II (A) Elective Elective Elective

Note for Years 3 and 4: One of the following two courses is required: ENGN2000 (AE200) Environmental Impacts and Resource Management (A) or CHEM3009 (ES312) Environmental Chemistry. CHEM3009 (ES312) is offered in alternate years.

*Students must take either PHYS1000 (MP150) or PHYS1002 (MP140) but not both for credit.

Electives must include one Humanities course at the 3000 or 4000 level, one additional Humanities course at any level (see page 176 for a list of courses and their designations), and three 'A' courses. However, if ENGN2000 (AE200) is taken, then only two additional 'A' courses are required.

In addition to the College Core, students must take the following courses to meet the requirements of this program:

Major

BIOL2002 (B260)	Plant Physiology
BIOL2004 (B270)	Structural Botany
BIOL2005 (B300)	Principles of Plant Pathology (A)
BIOL3000 (B320)	General Entomology (A)
BIOL3002 (B335)	Weed Science (A)
CHEM2000 (CS201)	Organic Chemistry I
CHEM3001 (CS302)	Biochemical Pathways
GENE2000 (B240)	Genetics I
PHYS1000 (MP150)	Physics for the Life Sciences I or
PHYS1002 (MP140)	Physics I
PLSC4001 (PS415)	Crop Adaptation (A)
SOIL2000 (CS220)	Introduction to Soil Science (A)

plus

two Plant Science Production (PDN) Courses

two Plant Science (PS) Elective Courses

one of AGRN4000 (PS405) Agronomy (A) or

HORT4001 (PS410) Horticulture (A)

Electives must include two 'A' courses.

(See page 176 for a list of courses and their designations.)

Minor

Any five Plant Science degree courses approved by the Plant Science Program Advisor. Students cannot select courses which are required for their major.

Recommended Syllabus for a Major in Plant Science

Year 2

Semester III

CHEM2000 (CS201)	Organic Chemistry I
GENE2000 (B240)	Genetics I
SOIL2000 (CS220)	Introduction to Soil Science (A)
PHYS* or	Elective
	Elective

Semester IV

BIOL2002 (B260)	Plant Physiology
BIOL2004 (B270)	Structural Botany
CHEM3001 (CS302)	Biochemical Pathways
PHYS* or	Elective
	Elective

Year 3

Semester V

BIOL2005 (B300)	Principles of Plant Pathology (A)
BIOL3000 (B320)	General Entomology (A)
BIOL3002 (B335)	Weed Science (A)
	Elective
	Elective

Semester VI

RESM4008 (PS449) Plant Science Project-Seminar I (A)

Elective

Elective

Elective

Elective

Year 4

Semester VII

PLSC4001 (PS415) Crop Adaptation (A)

RESM4009 (PS450) Plant Science Project-Seminar II (A)

Elective

Elective

Elective

Semester VIII

AGRN4000 (PS405) Agronomy (A) or

HORT4001 (PS410) Horticulture (A)

Elective

Elective

Elective

Elective

PHYS* Students must complete the combination of PHYS1000 (MP150) or PHYS1002 (MP150) and STAT2000 (MP210) in Semesters III & IV. If PHYS1000/PHYS1002 is done in Semester III then STAT2000 will be done in Semester IV. If STAT2000 is done in Semester III, then PHYS1000/1002 will be done in Semester IV. (PHYS1000 (MP150) is preferred for Plant Science majors.)

Electives must include two Humanities courses, one of which must be at the 3000 or 4000 level, two Plant Science Production (PDN) courses and two additional Plant Science (PS) courses. (See page 176 for a list of courses and their designations.)

Minor in Agricultural Chemistry

Students intending to declare a minor in Agricultural Chemistry require a minimum of five chemistry courses, including CHEM2000 (CS201) and CHEM3003 (CS318). Course selection must be approved by the Department of Environmental Sciences. Students may not select courses which are required for their major.

Minor in Pest Management

Students intending to declare a minor in Pest Management require MICR2000 (B225) plus a minimum of three other courses from the following:

BIOL2005 (B300)	Principles of Plant Pathology (A)
BIOL3000 (B320)	General Entomology (A)
BIOL3002 (B335)	Weed Science (A)
ENVS4001 (B406)	Economic Plant Pathology (A)
ENVS4002 (B425)	Economic Entomology (A)
ENVS4003 (B445)	Applied Weed Science (A)

Students may not select courses which are required for their major.

Bachelor of Technology (Environmental Horticulture)

This Nova Scotia Agricultural College program is designed to prepare students for a career in the landscape horticulture profession. It will prepare students to work successfully in the diverse landscape industry or to create their own businesses within the industry. This major could also lead to graduate study in the area of landscape architecture and related fields.

Years one and two of this program are satisfied by the successful completion of the Environmental Horticulture Technology program or a landscape-related program approved by the Department of Environmental Sciences, with a cumulative average of at least 60%. Applicants who meet the general requirements described above (two years postsecondary) may be admitted to the program upon completion of prescribed preparation courses.

Year 3

Spring/Summer Semester

HORT2002 (PS270) Landscape Horticulture Work Program I (12 weeks)

Semester V

BIOL1000 (B100) Botany

CHEM1000 (CS101) General Chemistry I

ENVS2000 (ES200) Environmental Studies I (A)

HORT3000 (ES370) Env. Processes & Natural Landscape Functions

SOIL2000 (CS220) Introduction to Soil Science* or Elective

Semester VI

ENVS2001 (ES201) Environmental Studies II (A)

MGMT1000 (EB225) Small Business Entrepreneurship

SOIL3000 (CS320) Soil Fertility (A)

Elective

Elective

Year 4

Semester VII

BIOL2005 (B300) Principles of Plant Pathology* (A) or Elective

BIOL3000 (B320) General Entomology (A)

BIOL3002 (B335) Weed Science* or Elective

HORT3007 (PS360) Environmental Horticulture Project **

Elective

Semester VIII

ENVS4001 (B406) Economic Plant Pathology (A)

ENVS4002 (B425) Economic Entomology (A)

ENVS4003 (B445) Applied Weed Science (A)
Elective
Elective

Notes: Students are required to take one Humanities elective at the 2000 level or higher. (See page 176 for a list of courses and their designations.)

- * Students who have completed an equivalent course at the diploma level with a mark of 70% or higher may take an elective in its place.
- ** HORT3007 (PS360) may be taken in any semester.

Recommended Electives:

A minimum of 3 electives must be chosen from this list.

BIOL2004 (B270) Structural Botany
ENGN3015 (AE370) Irrigation and Drainage
ENVS1000 (ES202) Basic Composting Skills (A) or
ENVS4004 (CS457) The Science of Composting and its Application (A)
HORT2003 (PS290) The British Garden
HORT3000 (ES370) Environmental Processes & Natural Landscape
Functions
HORT3001 (ES380) Landscape Project Management
HORT3004 (PS330) Greenhouse Crop Production & Floriculture (A)***
HORT3005 (PS335) Landscape Plant Production (A)
HORT3006 (PS370) Landscape Horticulture Work Program II
HORT4000 (ES470) Urban Tree Management
HORT4002 (PS440) Management of Specialized Turf
HORT4004 (PS460) Environmental Horticulture Project II **
SOIL3001 (CS345) Soil Conservation in Agriculture (A)
SPEC4007 (ES401) Special Topics in Environmental Studies I (A)**

SPEC4008 (ES402)	Special Topics in Environmental Studies II (A)**
SPEC4010 (PS421)	Special Topics in Plant Science I (A)**
SPEC4011 (PS422)	Special Topics in Plant Science II (A)**

** These courses may be taken in any semester. Students are permitted to take no more than two Special Topics courses.

*** Students who complete HORT0201 (PS39) at the diploma level may not take HORT3004 (PS330) for credit.

Bachelor of Technology in Applied Science (First Offered 2005/2006)

This program results in the awarding of an Engineering Technology Diploma after successful completion of Year 2, and a Bachelor of Technology in Applied Science after successful completion of Year 4.

Under the auspices of a Memorandum of Understanding (MOU), graduates of the degree program are qualified to apply for direct admission into the Bachelor of Education program in Technology Education offered by Acadia University. Any student planning to continue studies towards a teaching certificate should, in consultation with their Student Advisor, ensure that their program of study includes six courses from a second teachable subject area such as Biology, Chemistry, Economics, or Mathematics.

Students must complete the following courses to complete the requirements of the program:

CSCI1000 (MP222)	Computer Methods
ECON1000 (EB110)	Principles of Microeconomics (A)
ENGL1000 (H113)	Composition
ENGN1001 (AE102)	Design and Graphics
ENGN1003 (AE120)	Properties and Mechanics of Materials
ENGN1004	Wood Construction Technology I
ENGN1005	Metal Construction Technology I
ENGN2001 (AE202)	Agricultural Machinery
ENGN2006 (AE260)	Surveying
ENGN2007	Fluid Power Technology

ENGN2008	Digital Electronics and Computer Interfacing
ENGN3001 (AE305)	Engineering Measurements and Controls
ENGN3009 (AE335)	Materials Handling and Processing
ENGN3018	Technology Modules
ENGN3019	Communications Technology
ENVS2000 (ES200)	Environmental Studies I
ENVS2001 (ES201)	Environmental Studies II
MATH1000 (MP100)	Calculus and Analytic Geometry I
MATH1001 (MP105)	Calculus and Analytic Geometry II
PHYS1002 (MP140)	Physics 1
RESM4000 (AE449)	Project Seminar I
RESM4001 (AE450)	Project Seminar II
	1 English Elective
	1 Social Studies Elective
	5 Technology Electives
	11 Electives

Recommended Syllabus

Year 1

Semester I

ECON1000 (EB110)	Principles of Microeconomics
ENGL1000 (H113)	Composition
ENGN1001 (AE102)	Design and Graphics
ENGN1005	Metal Construction Technology I
MATH1000 (MP100)	Calculus & Analytic Geometry I

Semester II

ENGN1003 (AE120)	Properties & Mechanics of Materials
ENGN1004	Wood Construction Technology I
ENGN2001 (AE202)	Agricultural Machinery
MATH1001 (MP105)	Calculus & Analytic Geometry II
PHYS1002 (MP140)	Physics I

Year 2

Semester III

CSCI1000 (MP222)	Computer Methods
ENGN2006 (AE260)	Surveying
ENGN3009 (AE335)	Materials Handling & Processing
	Elective*
	Elective*

Semester IV

ENGN2007	Fluid Power Technology
ENGN2008	Digital Electronics & Computer Interfacing
ENGN3001 (AE305)	Engineering Measurements & Controls
	Elective*
	Elective*

The Engineering Technology Diploma is conferred upon successful completion of Year 2.

Year 3

Semester V

ENGN3019	Communications Technology
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ENVS2000 (ES200) Environmental Studies I

Elective

Elective

Elective

Semester VI

ENGN3018 Technology Modules

ENVS2001 (ES201) Environmental Studies II

RESM4000 (AE449) Bio-Environmental Systems

Management Project-Seminar I

Elective

Elective

Year 4

Semester VII

RESM4001 (AE450) Bio-Environmental Systems

Management Project-Seminar II

Elective

Elective

Elective

Elective

Semester VIII

Elective

Elective

Elective

Elective

Elective

Note: * indicates that two of the four electives in Year 2 must be from the list of Technology Electives.

The following lists contain courses qualifying as electives in the designated study areas required of the program. It is the student's responsibility to ensure that any prerequisite requirements for taking any of the courses listed are met.

Technology Electives

ENGN2000 (AE200)	Environmental Impacts and Resource Management (A)
ENGN2002 (AE204)	Introduction to Systems Analysis
ENGN2004 (AE215)	Aquacultural Environment (A)
ENGN2009	Metal Construction Technology II
ENGN2010	Wood Construction Technology II
ENGN3003 (AE311)	Technology for Precision Agriculture
ENGN3007 (AE320)	Structures and their Environment
ENGN3010 (AE340)	Soil and Water (A)
ENGN3013 (AE360)	Aquacultural Engineering (A)
ENGN3016 (AE380)	Engineering Economy
ENGN4000 (AE410)	Water and Water Quality Management (A)

Social Studies Electives

CMMT3000	Communication Theory and Skills**
ECON1001 (EB255)	Principles of Macroeconomics
EXTE3000 (H320)	Extension Education in the Rural Community
EXTE3001 (H321)	Leadership Development and the Social Action Process
GEOG1000 (H170)	Introductory Human Geography

GEOG3000 (H370)	Rural Geography**
HIST1000	Introduction to Canadian History I: 1000–1867
HIST1001	Introduction to Canadian History II: 1867–present
HIST3000 (H301)	Rural History**
PHIL3000 (H350)	Environmental and Agricultural Ethics
POLS1000	Introduction to Political Science
POLS1001	Structure and Function of Government
SOCI1000 (H160)	Introductory Sociology
SOCI1001	Introductory Sociology II
SOCI3000 (H360)	Rural Sociology

Note: **indicates that students intending to get their B.Ed. (Technology Education) degree must take one of these electives to meet provincial teacher licensing requirements. All 3000-level Social Studies courses have prerequisites.

English Electives

ENGL1001 (H101)	The Novel
ENGL1002 (H102)	Nature in English and American Literature
ENGL3000 (H310)	Literature of Atlantic Canada

Engineering Diploma

The Engineering Diploma program is the 22-course Associated Universities program given in conjunction with Dalhousie University's Faculty of Engineering. Students who successfully complete this program at NSAC receive an Engineering Diploma.

As Dalhousie University and the Associated Universities (AUs) form a unified system of engineering education, all diploma graduates from the AUs are guaranteed admission to Dalhousie. Students at the AUs will normally apply to disciplines at Dalhousie at the end of their first year in engineering since some discipline-specific courses are required in Year 2. They will be granted placeholder status on the basis of their averages and the availability of seats in the discipline. These placeholders will be assured continuance if the standards for promotion are met by the student at the AU in Year 2. Placeholders are valid for one year, although holders may reapply. Students are free to apply for transfer to Dalhousie before completion of the engineering diploma, subject to Dalhousie's course transfer regulations — this is an important

consideration for those requiring discipline-specific courses not offered at a particular AU. This B.Eng. program leads to recognition by the provincial Associations of Professional Engineers.

Requirements

The academic requirements for the Engineering Diploma are successful completion of:

- all courses specified in the syllabus of courses
- at least 22 semester courses
- at least 11 courses at NSAC, including 6 of the last 10 required courses.

The minimum level of academic achievement to graduate is a cumulative average of 60%.

Syllabus

Year 1

Semester I

CHEM1000 (CS101)	General Chemistry I
ENGL1002 (H102)*	Nature in English and American Literature
ENGN1001 (AE102)	Design and Graphics
MATH1000 (MP100)	Calculus and Analytic Geometry I
PHYS1002 (MP140)	Physics I

Semester II

CHEM1001 (CS102)	General Chemistry II
ENGN1002 (AE110)	Statics
MATH1001 (MP105)	Calculus and Analytic Geometry II
PHYS1003 (MP145)	Physics II
	Humanities*

Year 2

Semester III

CSCI2000 (MP220) Computer Science

ENGN3000 (AE300) Electric Circuits
Discipline-specific
Discipline-specific
Discipline-specific
Discipline-specific

Semester IV

MATH2001 (MP236) Differential Equations

STAT2001 (MP212) Probability & Statistics for Engineering
Discipline-specific
Discipline-specific
Discipline-specific
Discipline-specific

Note: The following discipline-specific courses are required for each engineering discipline:

Engineering Diploma Program – Required Discipline-Specific Courses

Semester III

Biosystems (Agricultural)	ENGN2005 Dynamics	CHEM2000 Organic Chemistry I	BIOL1000 Botany	Humanities
Chemical	ENGN2000 Envmtl. Impacts & Resource Mgt.	ENGN3002 Thermodynamics	MATH2000 Multivariable Calculus	CHEM2000 Organic Chemistry I
Civil	ENGN20005 Dynamics	ENGN3002 Thermodynamics	MATH2000 Multivariable	Humanities

			Calculus	
Electrical	ENGN3004 Digital Circuits	ENGN3002 Thermodynamics	MATH2000 Multivariable Calculus	Humanities
Environmental	ENGN2000 Envmtl. Impacts & Resource Mgt.	CHEM2000 Organic Chemistry I	BIOL1000 Botany	Humanities
Industrial	ENGN2005 Dynamics	ENGN3002 Thermodynamics	MATH2000 Multivariable Calculus	Humanities
Mechanical	ENGN2005 Dynamics	ENGN3002 Thermodynamics	Humanities	Humanities
Metallurgical	ENGN2005 Dynamics	ENGN3002 Thermodynamics	MATH2000 Multivariable Calculus	Humanities
Mining	ENGN2005 Dynamics	ENGN3002 Thermodynamics	MATH2000 Multivariable Calculus	Humanities
Semester IV				
Biosystems (Agricultural)	ENGN3006 Strength of Materials	ENGN3011 Fluid Mechanics	ENGN3016 Engineering Economy	BIOL1001 Zoology
Chemical	ENGN3005 Fund. of Chem. Engineering	ENGN3011 Fluid Mechanics	ENGN3016 Engineering Economy	Humanities
Civil	ENGN3006 Strength of Materials	ENGN3011 Fluid Mechanics	ENGN3016 Engineering Economy	GEOL2000 Intro. to Geology
Electrical	MATH3000 Applied Linear Algebra	CSCI3000 Data Structures & Num. Methods	ENGN3008 Circuit Analysis	ENGN3017 Design Project
Environmental	GEOL2000 Intro. to Geology	ENGN3011 Fluid Mechanics	ENGN3016 Engineering Economy	BIOL1001 Zoology
Industrial	ENGN3006 Strength of	ENGN3011 Fluid Mechanics	ENGN3016 Engineering	Humanities

	Materials		Economy	
Mechanical	ENGN3006 Strength of Materials	ENGN3011 Fluid Mechanics	ENGN3016 Engineering Economy	ENGN3017 Design Project
Metallurgical	ENGN3006 Strength of Materials	ENGN3011 Fluid Mechanics	ENGN3016 Engineering Economy	Humanities
Mining	ENGN3006 Strength of Materials	ENGN3011 Fluid Mechanics	ENGN3016 Engineering Economy	Humanities

Notes: *Humanities may be any (H) course except FREN1000 (H130), FREN1001 (H131), SPAN1000 (H135), and SPAN1001 (H136). See page 176 for a list of courses and their designations.

Prior to graduation from Dalhousie University's Faculty of Engineering, students must complete two writing courses;

ENGL1000 (H113), ENGL1001 (H101), ENGL1002 (H102), SOCI1000 (H160), and GEOG1000 (H170) are acceptable.

Prior to graduation from Dalhousie University's Faculty of Engineering, students must complete a Technical Communications course;

ENGL1000 (H113), with components from ENGN1001 (AE102) and CSCI2000 (MP220), satisfies this requirement.

A Humanities course may only be used once to satisfy the above requirements.

Biosystems (Agricultural) Engineering and Environmental Engineering

These two disciplines of engineering are taught and administered jointly by the Engineering Department of NSAC and the Biological Engineering Department, Dalhousie University's Faculty of Engineering. They are both co-operative programs but, unlike programs of other engineering disciplines, they are based on both biological and engineering science principles. This makes it practical for students to transfer after Year 1 of the B.Sc.(Agr.) program into Year 2 of these engineering programs.

Students in these disciplines who complete the two-year engineering diploma enter Dalhousie University's Faculty of Engineering in Year 3 and can then return to NSAC in Semester VII to study specialized Agricultural Engineering, Agricultural, Aquacultural, and Environmental Science courses.

Graduates of these B.Eng. programs will meet the formal education requirements for admission to the provincial Associations of Professional Engineers and the provincial Institutes of Agrologists.

Pre-Veterinary Medicine

Students prepare to enter the program leading to a Doctor of Veterinary Medicine at the University of Prince Edward Island by completing a two-year program at NSAC.

Requirements

The following is the minimum academic requirement for application for admission to the Atlantic Veterinary College (AVC). It is the student's responsibility to ensure that the requirements are met. Students should consult the latest University of Prince Edward Island calendar to make sure that there have been no changes. Twenty, one-semester courses or equivalent are required. Students are required to be registered in at least five credit courses per semester. These include:

- Biology: four courses including Genetics and Microbiology
- Chemistry: three courses including Organic Chemistry
- English: two courses including one with emphasis on writing
- Humanities and Social Sciences: three courses
- Mathematics: two courses including Statistics
- Physics: one course
- Electives: five from any discipline.

Science courses will normally have a laboratory component.

See Appendix III for listing of NSAC courses that meet AVC Admission Requirements

Recommended Syllabus

Year 1

Semester I

AGRI1000 (IN100)	Agricultural Ecosystems* (A) DE
BIOL1000 (B100)	Botany
CHEM1000 (CS101)	General Chemistry I
ENGL1000 (H113)	Composition
MATH1000 (MP100)	Calculus & Analytic Geometry I

Semester II

BIOL1001 (B110)	Zoology
CHEM1001 (CS102)	General Chemistry II
ECON1000 (EB110)	Principles of Microeconomics* (A) DE
ENGL1001 (H101)	The Novel
MATH1001 (MP105)	Calculus & Analytic Geometry II*

Year 2

Semester III

ANSC2000 (AS200)	Animal Agriculture I* (A)
CHEM2000 (CS201)	Organic Chemistry I
GENE2000 (B240)	Genetics I
PHYS**	Physics or
STAT2000 (MP210)	Introduction to Statistics
	Humanities/SS Elective***

Semester IV

BIOL2006 (AS230)	Mammalian Physiology*
CHEM3001 (CS302)	Biochemical Pathways*
MICR2000 (B225)	Microbiology

PHYS** Physics or
STAT2000 (MP210) Introduction to Statistics
 Humanities/SS Elective***

- * May substitute another elective; check requirements of specific options to complete a degree at NSAC.
- ** PHYS1000 (MP150) Physics for Life Sciences I or PHYS1002 (MP140) Physics
- *** Any Humanities or Economics (ECON) course will fit requirements of Humanities or Social Science Elective (see page 176 for a list of courses and their designations).

Technician Programs

To satisfy the needs of agriculture and its related businesses and services, the Nova Scotia Agricultural College offers a broad program of studies leading to Technician diplomas.

General information

Students who successfully complete all the requirements will be granted Technician diplomas, and thus become Associates of the Nova Scotia Agricultural College. Until August 2006, a High Honours diploma will be awarded to a student who has attained an average of at least 80%, and an Honours diploma will be awarded to one who has attained an average of at least 75%. Effective September 2006, a High Honours diploma will be awarded to a student who has attained an average of at least 90%, and an Honours diploma will be awarded to one who has attained an average of at least 80%.

It is the student's responsibility to see that the requirements for the diploma are fulfilled.

Agricultural Business

This two-year program prepares students for careers on the farm as business managers or as managers and supervisors in farm-related business firms.

A student who has successfully completed the first year of this program with a good study record may apply for acceptance into a two-year program in Farming Technology. A student who has successfully completed the two years with a good study record may apply for acceptance into a one-year program in Agricultural Technology.

Syllabus

Agricultural Business with a Specialization in Animal Science

Year I

Semester I

AGRN0201 (PS52)	Cropping Systems I: Cereal-Based Systems
CHEM0100 (CS14)	Agricultural Chemistry
ECON0100 (EB13)	Introductory Microeconomics
ENGL0100 (H10)	Technical Writing
MGMT0100 (EB10)	Accounting
SOIL0100 (CS12)	Principles of Soil Science
ANSC0100 (AS12)	Farm Workplace I (Optional)

Semester II

AGRN0202 (PS56)	Cropping Systems II: Forage-Based Systems
CSCI0100 (MP14)	Computational Methods
ECON0101 (EB12)	Introductory Macroeconomics
MGMT0101 (EB11)	Applied Accounting & Taxation
MGMT0103 (EB41)	Business Law
SOIL0200 (CS13)	Soil Management

Year 2

Semester III

ANSC0103 (AS16)	Farm Animal Production I
ANSC0104 (AS18)	Farm Animal Biology I
MGMT0102 (EB40)	Agricultural Marketing
MGMT0201 (EB65)	Business Project
MGMT2003 (EB340)	Farm Management (A)
ANSC0100 (AS12)	Farm Workplace I (Optional)

Semester IV

ANSC0109 (AS66)	Farm Animal Production II
ANSC0110 (AS68)	Farm Animal Biology II
ECON2002 (EB220)	Production Economics (A)
MGMT0200 (EB42)	Applied Farm Management
MGMT0201 (EB65)	Business Project
	Humanities Elective*

Agricultural Business with a Specialization in Plant Science

Year I

Semester I

AGRN0201 (PS52)	Cropping Systems I: Cereal-Based Systems
CHEM0100 (CS14)	Agricultural Chemistry
ECON0100 (EB13)	Introductory Microeconomics
ENGL0100 (H10)	Technical Writing
MGMT0100 (EB10)	Accounting
SOIL0100 (CS12)	Principles of Soil Science
ANSC0100 (AS12)	Farm Workplace I (Optional)

Semester II

AGRN0202 (PS56)	Cropping Systems II: Forage-Based Systems
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CSCI0100 (MP14)	Computational Methods
ECON0101 (EB12)	Introductory Macroeconomics
MGMT0101 (EB11)	Applied Accounting and Taxation
MGMT0103 (EB41)	Business Law
SOIL0200 (CS13)	Soil Management

Year 2

Semester III

ANSC0103 (AS16)	Farm Animal Production I
BIOL0200 (B43)	Entomology
HORT2000 (PS200)	Vegetable Production (A) ¹
MGMT0102 (EB40)	Agricultural Marketing
MGMT0201 (EB65)	Business Project
MGMT2003 (EB340)	Farm Management (A)
	Humanities Elective*

Semester IV

AGRN0200 (PS49)	Potato Production ¹
BIOL0101 (B40)	Plant Pathology
ECON2002 (EB220)	Production Economics (A)
MGMT0200 (EB42)	Applied Farm Management
MGMT0201 (EB65)	Business Project
PLSC0203 (PS76)	Plant Products Physiology

¹ May substitute HORT0202 (PS43) or HORT0203 (PS44) if timetable permits.

(See page 176 for a list of courses and their designations.)

Agricultural Business with a Specialization in Agricultural Engineering

Year 1

Semester I

CHEM0100 (CS14)	Agricultural Chemistry
ECON0100 (EB13)	Introductory Microeconomics
ENGL0100 (H10)	Technical Writing
ENGN1000 (AE101)	Computer Aided Graphics and Projection
MGMT0100 (EB10)	Accounting
SOIL0100 (CS12)	Principles of Soil Science
ANSC0100 (AS12)	Farm Workplace I (Optional)

Semester II

CSCI0100 (MP14)	Computational Methods
ECON0101 (EB12)	Introductory Macroeconomics
MGMT0101 (EB11)	Applied Accounting and Taxation
MGMT0103 (EB41)	Business Law
SOIL0200 (CS13)	Soil Management
	Humanities Elective*

Year 2

Semester III

AGRN0201 (PS52)	Cropping Systems I: Cereal-Based Systems
ANSC0103 (AS16)	Farm Animal Production I
MGMT0102 (EB40)	Agricultural Marketing
MGMT0201 (EB65)	Business Project
MGMT2003 (EB340)	Farm Management (A)
	Elective

Semester IV

AGRN0202 (PS56)	Cropping Systems II: Forage-Based Systems
ECON2002 (EB220)	Production Economics (A)

ENGN0101 (AE38)	Horticultural Engineering
ENGN0103 (AE52)	Agricultural Power Systems
ENGN2001 (AE202)	Agricultural Machinery
MGMT0200 (EB42)	Applied Farm Management
MGMT0201 (EB65)	Business Project

Animal Science

The Nova Scotia Agricultural College offers a two-year program in Animal Science to prepare students for careers on farms as animal husbandry specialists or as animal science technicians in agricultural services and industries. Students interested in working with lab or companion animal species should consider the Animal Health Technology program.

A student who has successfully completed the first year of this program with a good study record may apply for acceptance into a two-year program in Farming Technology. A student who has successfully completed the two years with a good study record may apply for acceptance into a one-year program in Agricultural Technology.

Assuming published academic standards are met, acceptance is based primarily on an assessment of whether the student's goals are compatible with the objectives of the program. Priority will be given to students who have previous experience with farm animals and/or on commercial farms.

Individuals accepted to the program must be capable of working with all species of farm animals and in farm units on a regular basis. Students who are not able to meet these requirements may not be able to continue in the program. Protective clothing and footwear is required and appropriate vaccinations may be needed. Details will be sent to students on acceptance.

Syllabus1

Year 1

Semester I

ANSC0100 (AS12)	Farm Workplace I
ANSC0101 (AS13)	Farm Animal Production & Practices I
ANSC0105 (AS20)	Farm Animal Breeding
ANSC0107 (AS26)	Farm Animal Biology & Practices I

ENGL0100 (H10) Technical Writing
SOIL0100 (CS12) Principles of Soil Science

Semester II

ANSC0102 (AS14) Farm Animal Production & Practices II
ANSC0106 (AS22) Farm Workplace II
ANSC0108 (AS27) Farm Animal Biology and Practices II
ANSC0111 (AS65) Project-Seminar
CSCI0100 (MP14) Computational Methods
SOIL0200 (CS13) Soil Management

Year 2

Semester III

AGRN0201 (PS52) Cropping Systems I: Cereal-Based Systems
ANSC0200 (AS76) Farm Animal Production III
ANSC0201 (AS77) Farm Animal Production III Practices
Management Elective2
Elective3

Semester IV

AGRN0202 (PS56) Cropping Systems II: Forage-Based Systems
ANSC0202 (AS86) Farm Animal Production IV
ANSC0203 (AS87) Farm Animal Production IV Practices
Management Elective2
Elective3

Students should consult with the Program Coordinator prior to choosing electives.

1 Animal Science Technician students take required courses in the listed sequence, and in the listed semesters. Deviations from this will require written permission from the Head of the Plant and Animal Sciences Department.

2 Students must choose two of the following four Management courses: MGMT0100 (EB10), MGMT2003 (EB340) (offered in the Fall semester), MGMT0101 (EB11), and MGMT0103 (EB41) (offered in the Winter semester).

3 Students may choose electives from other departments or from degree courses, if the timetable and prerequisites permit. Courses from other institutions and from NSAC Continuing Education programs may be recognized as electives. Students should consult with the program coordinator prior to choosing electives and apply to the Head of the Department of Plant and Animal Sciences to have courses approved as electives.

Technology Programs

The Nova Scotia Agricultural College offers specialized two-year and three-year programs to prepare students for careers associated with laboratory techniques in Animal Health, and with the practice of Environmental Horticulture and Plant Science. These studies lead to a Diploma of Technology in each of these areas.

General information

A candidate for these programs may qualify for admission with high school completion or equivalent. See syllabus of each program for specific admission requirements.

Each candidate must be available for an interview, if requested.

Students who successfully complete all the requirements will be granted a Diploma of Technology. Until August 2006, a High Honours diploma will be awarded to a student who has attained an average of at least 80%, and an Honours diploma will be awarded to one who has attained an average of at least 75%. Effective September 2006, a High Honours diploma will be awarded to a student who has attained an average of at least 90%, and an Honours diploma will be awarded to one who has attained an average of at least 80%.

It is the student's responsibility to see that the requirements for the diploma are fulfilled.

Animal Health

A new two-year Veterinary Technology (VT) program is being developed to replace NSAC's former Animal Health Technology (AHT) program. The VT program will admit its first class in

September 2006. Therefore, the Animal Health Technology program will not be accepting a first-year class in 2005. Please see details below in the Admission Requirements section.

The VT Program is being designed to conform to the accreditation standards of the Canadian Veterinary Medical Association (CVMA), thus ensuring graduates' eligibility to write the credentialing examinations of the Eastern Veterinary Technician Association and other provincial registration bodies.

The VT Program will be a two-year program composed largely of career-directed courses. It is designed to prepare students with the skills and knowledge required to work as technical assistants to practising veterinarians, researchers and other persons who deal with animals, especially in the context of medicine or science. The large animal component of the VT Program is designed to help those graduates who choose to work in mixed practices and those who wish to further develop their clinical skills in livestock and equine medicine.

Most graduates from NSAC's VT Program will find employment in small-animal practices. The main thrust of the program is therefore towards companion animals. Other career paths that graduates have followed include: animal shelter manager, veterinary-related sales representative, research animal technician and regulatory technician.

Admission Requirements

Special Note: Due to important program changes, the VT Program will admit its first class in September 2006. However, students who were planning to apply for September 2005 should consider applying for one of the other exciting programs at NSAC where they will acquire a breadth of knowledge, skills and experience to help prepare them for the VT Program, and enhance their application for the September 2006 offering of the two-year VT Program.

Admission requirements are: high school graduation with pass marks and an average of at least 60% in Biology, Chemistry, English, Math (Pre-Calculus Mathematics), and one other course, all at the following provincial levels: New Brunswick 120 or 121; Newfoundland & Labrador Academic 3 (70% required in Math 3200); Nova Scotia Academic 12 (or 70% required in Mathematics 12 if Pre-Calculus Mathematics is not taken); Prince Edward Island Academic XII.

In keeping with NSAC policy, mature students are evaluated individually and may be accepted with less than the published academic requirements.

The selection process includes a full day of orientation at NSAC. Applications will be accepted any time up to the end of February 2006. Orientation and interview sessions will be scheduled starting in September 2005.

For further information on the Veterinary Technology Program, contact the Registrar's

Environmental Horticulture

The Nova Scotia Agricultural College offers this two-year program to help prepare students for careers with landscaping firms, planning agencies, recreational parks, or institutions, or in self-employed roles as landscape horticultural technologists.

Admission Requirements

High school graduation with pass marks and an average of at least 60% in Biology, English, Math, and one other course, all at the following provincial levels: New Brunswick 120 or 121; Newfoundland & Labrador Academic 3; Nova Scotia Academic 12; Prince Edward Island Academic XII. Additionally, the applicant must have passed Grade 11 Chemistry. Applicants may be required to attend a selection interview.

Syllabus

Year 1

Semester I

BIOL0200 (B43) Entomology

CSCI1000 (MP222) Computer Methods

HORT0100 (ES60) Landscape Plants I

HORT0102 (PS47) Turfgrass Production and Management

HORT0103 (PS50) Landscape Horticulture I

SOIL0100 (CS12) Principles of Soil Science

Semester II

BIOL0101 (B40) Plant Pathology

BIOL0102 (PS45/B41) Plant Physiology & Stress Management

BIOL0103 (B46) Weed Science

ENGN0101 (AE38) Horticultural Engineering

HORT0101 (ES61) Landscape Plants II

SOIL0200 (CS13) Soil Management

Spring Session

HORT0206 (PS70) Landscape Techniques – 12 weeks

Year 2

Semester III

ENGL0100 (H10) Technical Writing

ENGN0100 (AE14) Surveying

HORT0204 (ES62) Landscape Plants III

HORT0207 (PS71) Arboriculture

Elective

Elective

Elective

Semester IV

CMMT0101 (H60) Communication Skills

HORT0208 (PS72) Landscape Maintenance

MGMT2000 (H140) Human Resource Management

Elective

Elective

Elective

Recommended Electives:

A minimum of four of the six electives must be chosen from this list.

ENGN1000 (AE101) Computer Aided Graphics and Projection

ENGN0102 (AE46) Soil and Water Resources Management

ENGN1004	Wood Construction Technology I
HORT0200 (PS38)	Nursery Crop Production
HORT0201 (PS39)	Greenhouse Crop Management
HORT0202 (PS43)	Small Fruit Crops
HORT0203 (PS44)	Tree Fruit Crops
HORT0205 (PS51)	Residential Landscape Design and Construction
HORT0209 (PS73)	Landscape Horticulture II
HORT0210 (PS74)	Landscape Design and Construction
HORT2000 (PS200)	Vegetable Production
HORT2001 (PS210)	Principles of Organic Horticulture
MGMT0100 (EB10)	Accounting
MGMT0103 (EB41)	Business Law
PLSC0200 (PS55)	Plant Propagation
PLSC0201 (PS90)	Technology Project
PLSC0203 (PS76)	Plant Products Physiology

Plant Science Technology

This two-year program takes an entrepreneurial approach to agriculture, stressing a combination of practical skills and good basic knowledge; students learn in the context of social and environmental responsibility using sustainable production systems. Graduates will be skilled in problem-solving, diagnostics and whole-system analysis.

The first two semesters are common for the three areas of concentration (ornamental horticulture, edible horticulture and agronomy). This allows the student flexibility in choosing options and selecting courses in the second year. The first-year courses provide students with a strong background in plant production techniques and small business practices preparing them for their required summer work experience in PS99 Plant Science Techniques. In their second year of study, students concentrate in their area of specialization, allowing them to tailor their education by selecting from more specialized courses.

A student who has successfully completed the first year of this program with a good study record may apply for acceptance into a two-year program in Farming Technology. A student who has successfully completed the two years with a good study record may apply for acceptance into a one-year program in Agricultural Technology.

Admission Requirements

High school graduation with university preparatory courses in Grade 12 English, Grade 11 Mathematics, Grade 11 Chemistry, and either Grade 10 Biology or Integrated Science.

Syllabus

Year 1

Semester I

BIOL0200 (B43) Entomology

ENGL0100 (H10) Technical Writing

MGMT0100 (EB10) Accounting

PLSC0100 (PS35) Utilization of Plant Resources

PLSC0200 (PS55) Plant Propagation

SOIL0100 (CS12) Principles of Soil Science

Semester II

BIOL0101 (B40) Plant Pathology

BIOL0102 (PS45/B41) Plant Physiology and Stress Management

BIOL0103 (B46) Weed Science

CSCI1000 (MP222) Computer Methods

MGMT1000 (EB225) Small Business Entrepreneurship

MGMT2000 (H140) Human Resource Management

Semester III (Spring/Summer)

PLSC0202 (PS99) Plant Science Techniques

Semester IV and Semester V

After the core 12 courses are taken in the first year, students must choose 12 more courses to complete the diploma. Each student chooses an area of specialization from the three shown

below. Each area has 7 core courses, including the summer course PLSC0202 (PS99) Plant Science Techniques. The student then chooses 5 more elective courses (at least 3 from the “recommended electives” group) to complete the 24 credits.

Ornamental Horticulture

Semester IV

HORT0100 (ES60)	Landscape Plants I
HORT0103 (PS50)	Landscape Horticulture I
HORT0201 (PS39)	Greenhouse Crop Management
	Elective
	Elective
	Elective

Semester V

ENGN0101 (AE38)	Horticultural Engineering
HORT0101 (ES61)	Landscape Plants II
HORT0200 (PS38)	Nursery Crop Production
	Elective
	Elective

Edible Horticulture

Semester IV

AGRN0201 (PS52)	Cropping Systems I: Cereal-Based Systems
ANSC0100 (AS12)	Farm Workplace I
HORT2000 (PS200)	Vegetable Production (A)
HORT0202 (PS43)	Small Fruit Crops
	Elective
	Elective

Semester V

AGRN0200 (PS49) Potato Production

HORT0203 (PS44) Tree Fruit Crops

Elective

Elective

Elective

Agronomy

Semester IV

AGRN0201 (PS52) Cropping Systems I: Cereal-Based Systems

ANSC0100 (AS12) Farm Workplace I

ANSC0103 (AS16) Farm Animal Production I

Elective

Elective

Elective

Semester V

AGRN0200 (PS49) Potato Production

AGRN0202 (PS56) Cropping Systems II: Forage-Based Systems

ANSC0109 (AS66) Farm Animal Production II

Elective

Elective

Recommended Electives:

ENGN0101 (AE38) Horticultural Engineering

ENGN0103 (AE52) Agricultural Power Systems

ENGN2001 (AE202) Agricultural Machinery

HORT0102 (PS47) Turfgrass Production and Management

HORT0204 (ES62) Landscape Plants III

HORT2001 (PS210)	Principles of Organic Horticulture
MGMT0102 (EB40)	Agricultural Marketing
MGMT0103 (EB41)	Business Law
MGMT2003 (EB340)	Farm Management (A)
PLSC0203 (PS76)	Plant Products Physiology
PLSC1000 (PS147)	Farm Woodlot Management (A)
PLSC2000 (PS211)	Specialty Crops

or other courses approved by the Department of Plant & Animal Sciences.

Plant Science core courses from the other areas of concentration may also be used as recommended electives: HORT0100 (ES60), HORT0204 (ES61), HORT0200 (PS38), HORT0201 (PS39), HORT0202 (PS43), HORT0203 (PS44), AGRN0200 (PS49), HORT0103 (PS50), HORT2000 (PS200).

Technology Programs Entered from Technician Programs

The College offers programs leading to a Diploma of Technology in Agricultural Technology and in Farming Technology. See the syllabus of each program for specific admission requirements.

A student who successfully completes all the requirements will be granted a Diploma of Technology. Until August 2006, a diploma with High Honours will be awarded to a student who has attained an average of at least 80%, and a diploma with Honours will be awarded to one who has attained an average of at least 75%. Effective September 2006, a diplomas with High Honours will be awarded to a student who has attained an average of at least 90% and a diploma with Honours will be awarded to one who has attained at average of at least 80%.

It is the student's responsibility to see that the requirements for the awarding of the diploma are fulfilled.

Agricultural Technology

A person with an NSAC Technician Diploma or with equivalent standing may apply to continue studies that would lead to a Diploma of Technology in Agricultural Technology. In order to satisfactorily complete the requirements for a Diploma of Technology in Agricultural Technology, a student must complete 12 approved courses, including a Technology Project, and earn an average of at least 60%.

Until August 2006 a diploma with Honours is awarded if an average of at least 75% is attained, including a mark of at least 75% on the Technology Project. A diploma with High Honours is awarded if an average of at least 80% is attained, including a mark of at least 80% on the Technology Project. Effective September 2006 a mark of 80% will be required on the Technology Project to receive an Honours diploma and a mark of 90% will be required on the Technology Project to receive a High Honours diploma.

The program of study including a Technology Project course (ANSC0300 (AS90), MGMT0302 (EB90), or PSC0201 (PS90)) must first be approved by the corresponding department. In doing so, the department will consider the appropriateness and feasibility of the specific project idea, as well as the student's ability to pursue an independent project, based on performance in the previous technician or equivalent program. Other courses may include those normally taken by other technical or degree students, provided all prerequisites are met.

Farming Technology

This program helps students prepare for careers as farmers, on a self-employed basis or as managers on commercial farms. Students wishing to pursue studies leading to a Diploma of Technology in Farming Technology register for the first year of the Agricultural Business, Animal Science Technician or Plant Science Technology program. After successful completion of the first year, their applications are considered for the Farming Technology program. Students with equivalent prerequisites from other College programs can also be considered. If accepted, the student's program of studies includes a minimum of three semesters of prescribed courses, four months of approved farm experience, and seven months of on-farm training under the direction of a farming instructor.

In order to satisfactorily complete the requirements for a Diploma of Technology in Farming Technology, a student must complete all required courses, the on-farm training, and 14 of the approved electives, and must fulfil the experience requirement.

Until August 2006, a diploma with High Honours will be awarded to a student who has attained an average of at least 80%, and a diploma with Honours will be awarded to one who has attained an average of at least 75%. For a diploma with Honours or High Honours to be awarded, the student's mark in the Farm Project must be at or above the average mark requirement for Honours or High Honours. Effective September 2006 a diploma with High Honours will be awarded to a student who has attained an average of at least 90%, and a diploma with Honours will be awarded to one who has attained an average of at least 80%.

Syllabus

Four months of approved farm experience is to be completed before Semester I.

Semester I

AGRN0201 (PS52)	Cropping Systems I: Cereal-Based Systems
ANSC0100 (AS12)	Farm Workplace I
CHEM0100 (CS14)	Agricultural Chemistry
MGMT0100 (EB10)	Accounting
MGMT0102 (EB40)	Agricultural Marketing
MGMT2003 (EB340)	Farm Management (A)

Semester II

AGRN0202 (PS56)	Cropping Systems II: Forage-Based Systems
CSCI0100 (MP14)	Computational Methods
ECON2002 (EB220)	Production Economics (A)
ENGN0103 (AE52)	Agricultural Power Systems
MGMT0101 (EB11)	Applied Accounting and Taxation
SOIL0200 (CS13)	Soil Management

Semester III

MGMT0301 (EB95) Practicum – Farming Technology, a seven-month contract, is developed between the College, the student, and a training farmer, following the first year of the program.

Year 2

Semester IV

MGMT0200 (EB42)	Applied Farm Management
MGMT0300 (EB72)	Farm Project
	14 Electives

Recommended Electives:

Semester I or III

ANSC0103 (AS16)	Farm Animal Production I
ANSC0104 (AS18)	Farm Animal Biology I
ANSC0200 (AS76)	Farm Animal Production III
BIOL0200 (B43)	Entomology
ECON0100 (EB13)	Introductory Microeconomics
ENGN0100 (AE14)	Surveying
ENGN1000 (AE101)	Computer Aided Graphics and Projection
HORT0201 (PS39)	Greenhouse Crop Management
HORT0202 (PS43)	Small Fruit Crops
HORT2000 (PS200)	Vegetable Production (A)
HORT2001 (PS210)	Principles of Organic Horticulture
PLSC0200 (PS55)	Plant Propagation
PLSC1000 (PS147)	Farm Woodlot Management (A)
	Humanities Course*

Semester II or IV

AGRN0200 (PS49)	Potato Production
ANSC0109 (AS66)	Farm Animal Production II
ANSC0110 (AS68)	Farm Animal Biology II
ANSC0203 (AS87)	Farm Animal Production IV Practices
BIOL0101 (B40)	Plant Pathology
BIOL0102 (PS45/B41)	Plant Physiology and Stress Management
BIOL0103 (B46)	Weed Science
ECON0101 (EB12)	Introductory Macroeconomics
ENGN0101 (AE38)	Horticultural Engineering
ENGN1004	Wood Construction Technology
ENGN2001 (AE202)	Agricultural Machinery

HORT0200 (PS38)	Nursery Crop Production
HORT0203 (PS44)	Tree Fruit Crops
MGMT0103 (EB41)	Business Law
PLSC0203 (PS76)	Plant Products Physiology

*(See page 176 for a list of courses and their designations.)

Introductory Studies Courses

Introductory Studies courses are designed to give potential students who fall below the College's entrance requirements the opportunity to enter NSAC programs. The one-semester courses, offered in the Fall and Winter semesters, consist of a collection of non-credit courses in Preparatory Chemistry, Mathematics, and Introductory Physics.

Applicants may, based on individual assessment, be admitted into Introductory Studies courses. The assessment includes educational background, life experience and personal motivation. Students with sufficient academic background may be eligible to take some university credit courses along with their required Introductory Studies courses. Applicants may also be admitted into Introductory Studies courses as prerequisites for another course.

For detailed course descriptions of the following Introductory Studies courses, please see Course Descriptions, Introductory Studies:

CHEM0050 (CS89)	Preparatory Chemistry
MATH0050 (MP85)	Functions
PHYS0050 (MP90)	Introductory Physics

For more information, please contact the Registrar's Office (reg@nsac.ns.ca).

Certificate Programs

Certificate of Specialization in Organic Agriculture

NSAC offers a Certificate program in Organic Agriculture. This initiative provides students with an opportunity to specialize in the expanding area of organic agriculture. The Certificate of

Specialization in Organic Agriculture enables students to approach agriculture from their area of interest, to know they can be recognized for this accomplishment and to continue to take other courses in agriculture toward a degree. To date the total organic sector is about 1–2 % of agriculture overall. However, the employment opportunities are expected to increase in an industry that is growing at the rate of 20% per year. There are also opportunities for self-employment on smaller farms than might be profitable under conventional production. Any student who has successfully completed four of the eligible organic agriculture credit courses (see list) and has an overall average of at least 60% in these courses can apply to receive a Certificate of Specialization in Organic Agriculture. Two of the courses may be substituted with approved “organic” courses offered by external institutions (see below). These alternate courses will be taken on a Letter of Permission.

Eligible Courses:

AGRI1002 (IN202):	Transition to Organic Agriculture
AGRN1000 (PS202):	Organic Field Crop Management
ANSC1000 (AS202):	Organic Livestock Production
ENVS1000 (ES202):	Basic Composting Skills
HORT2001 (PS210):	Principles of Organic Horticulture

Note: Students will not be required to take the courses in any particular order. ENVS1000, AGRI1002 and HORT2001 are currently offered in the Fall semester. ANSC1000 and AGRN1000 are currently offered in the Winter semester.

Other institutions offering courses that may be taken within the certificate:

1. University of British Columbia [Key Indicators of Sustainable Agriculture – UBC Agroecology 361],
2. University of Manitoba [Dryland Cropping Systems],
3. University of Guelph [Marketing in Organic Agriculture], and
4. Laval Université [French translation of the following NSAC courses – ES202, IN202, PS202 and AS202]*

* A student cannot receive credit for taking the same course in both French and English.

For more information or to apply for the Certificate, contact the Centre for Continuing & Distance Education (902-893-6666).

Description of Courses – Undergraduate and Technical

The course descriptions are grouped according to discipline and are in alphabetical and numerical order. NSAC implemented a new course numbering system for the 2004/2005 academic year. Course descriptions include the new course number, the old course number in brackets, the course title, and any applicable course designation(s). The course designations will assist students in determining program requirements as described in the program syllabi.

Designations include: (A) for Agriculture Courses, (H) for Humanities Courses, (AS) for Animal Science Courses, (PS) for Plant Science Courses, and (PDN) for Plant Science Production Courses.

Students who require a course for their program are given priority over students who are using the course as an elective. Enrolment in some cases may be restricted to specific program groups or may have maximum enrolment.

Course information indicates the weekly instructional requirement in hours per week. Thus “Winter: 3 lecs, 1 tutorial, and 3 labs” would indicate that the student would attend three hours of lecture, one hour of tutorial, and three hours of lab in the Winter semester. It does NOT indicate how many separate instructional sessions there are. For example, the three lecture hours may be three one-hour sessions, or two one-and-a-half-hour sessions.

The faculty reserves the right to make any necessary revisions or additions.

Corequisite: A course which must be taken concurrently with another course which lists it as a corequisite.

Prerequisite: A course which must be taken prior to the course which lists it as a prerequisite.

Preparatory: A course which is recommended to be taken prior to the course which lists it as a preparatory. This is particularly important for students without sufficient background information in that area.

Note: Students may be removed from courses for which they do not have prerequisites. Students who feel that they can successfully complete a course but do not have the required prerequisites or corequisites may seek the permission of the instructor to register for the course. Prerequisite waivers can be granted only by the instructors and must be submitted in writing, with the instructor’s signature, to the Registry.

Agricultural

AGRI1000 (IN100): Agricultural Ecosystems (A) DE

Coordinator: Prof. Caldwell

This course is an introduction to agriculture and food systems. The principles of agricultural production as studied in the disciplines of animal science, plant science, agricultural engineering, and soil science will be integrated to give a comprehensive view of agricultural ecosystems. Course work will include lectures, laboratories, problem-solving exercises, and small-group work. There will be a farm tour for all AGRI1000 students on September 21, 2005, from 1 pm until 7 pm. The course will expose students to issues and raise questions to be considered during the remainder of their undergraduate careers.

Along with the goal of providing the students with a knowledge of the application of science to agriculture, this course will assist students to understand the integrated nature of agriculture and food systems in both regional and global contexts. Associated course goals are to develop communication and independent learning skills and the ability to function effectively in team situations, and to stimulate students to think critically, logically, and quantitatively while respecting the values and ideas of others.

Fall semester – 3 lecs, 2 labs and/or tutorials per week.

DE – also offered as a web-based distance education course.

AGRI1001 (IN101): Food Security (A) DE

Coordinator: Prof. Fredeen

This course is structured similarly to AGRI1000. The emphasis will be on food security and recycling resources. Topics will include: global population, food production and distribution; globalization of agricultural trade; agricultural ethics; and rural sustainability. Course work will include lectures, laboratories, problem-solving exercises, and small-group work. The course will expose students to issues and raise questions for students to answer during the remainder of their undergraduate careers.

Along with the goal of providing the students with a knowledge of the application of science to agriculture, this course will assist students to understand the integrated nature of agriculture and food systems in both regional and global contexts. Associated course goals are to develop communication and independent learning skills and the ability to function effectively in team situations, and to stimulate students to think critically, logically, and quantitatively while respecting the values and ideas of others.

Winter semester.

DE – only offered as a web-based distance education course.

AGRI1002 (IN202): Transition to Organic Agriculture (A) DE

Instructor: TBA

This course is recommended for students looking for a general introduction to organic agriculture. The course consists of five stand-alone modules: Why organic?, Organic Certification, Planning the Farm System, Transition to Organic Crop Production, and Transition to Organic Livestock Production. Throughout the course students will be encouraged to participate in discussion groups and use the organic information resources currently available over the Internet.

Fall semester.

DE – only offered as a web-based distance education course.

AGRI1003 (H150): Agriculture Today (A)

Instructor: TBA

The course offers a basic overview of the agricultural industry in the Atlantic Provinces. Production trends and limiting factors, agricultural research, farm organizations, and government role in the industry are studied to provide an awareness and appreciation of Atlantic agriculture, the major things happening in it, and the new technology associated with it. The progress of the local industry and current issues are followed up through weekly reading assignments and class presentations. Commodity updates are presented through student seminars. This is a discussion-based course requiring class participation.

Winter semester – 3 lecs per week.

AGRI3000 (MP330): Agrometeorology

Instructor: Prof. Gordon

Prerequisite: PHYS1000 or PHYS1002

Introduction to the weather and climate of the Atlantic region. The course will cover the basics of the surface weather systems, the energy balance of crops, and the factors determining the climate of the region. The final phase will look at how weather information is used to predict crop maturity, yield, disease severity, and insect pest levels.

Winter semester – 3 lecs and 2 labs per week.

Offered in alternate years; next offered in 2005/2006.

AGRI4000 (IN400): Contemporary Issues in Agriculture (A)

Instructor: Prof. Tennessen

This course has limited enrollment.

Prerequisite: Third- or fourth-year standing

This course allows senior students in all disciplines to discuss current topics of interest to agricultural professionals. These topics could include soil degradation, integrated pest management, antibiotics in feed, the occupation of farming, animal welfare, etc. Students will be given weekly required readings.

Fall semester – 3-period seminar weekly.

Agronomy

AGRN0200 (PS49): Potato Production DE

Instructor: Prof. Goodyear

Cultural practices involved in production are discussed in relation to the botanical characteristics of the potato plant. Physiological changes involved in sprouting, tuber initiation, crop development, and storage are considered in detail. Seed potato production is given particular attention.

Winter semester – 3 lecs and 2 labs per week.

DE – also offered as a web-based distance education course

AGRN0201 (PS52): Cropping Systems I: Cereal-Based Systems

Instructor: Prof. Jeliaskov

This course takes a systems approach to the study of crop and soil management in rotations involving the growing of the principal cereals, oilseeds, pulses and other grains and their relationship to the main vegetable cash crops in the region. Through a whole-farm approach over time, it studies environmentally and economically sustainable methods for cash crop and grain-based animal feed production. It stresses soil and water conservation and an understanding of principles and processes of the nutrient cycles which are critical to improving the food production environment. Students will gain a knowledge of grains in relation to people and the environment, from soil to shelf.

Fall semester – 3 lecs and 2 labs per week.

AGRN0202 (PS56): Cropping Systems II: Forage-Based Systems

Instructor: Prof. Martin

The second course in cropping systems focuses on the forage crops. Students will acquire the basic knowledge and skills for the management of forage crops within cropping systems in a socially and environmentally responsible manner. Soil and water conservation will be emphasized in the context of production agriculture. Production and management for sustainable yields of forage crops under conditions specific to Atlantic Canada will be emphasized. Students will develop investigative and critical thinking skills to evaluate forage publications and enable themselves to address production challenges as they arise.

Winter semester – 3 lecs and 2 labs per week.

AGRN1000 (PS202): Organic Field Crop Management (A, PS) DE

Instructor: TBA

This course will introduce students to organic principles and practices applied to the production and management of field crops. The criteria for optimum yield and quality of field crops are presented within the context of organic farming principles, sustainable soil and nutrient management, and the requirements for organic certification. Five stand-alone modules provide a framework for study:

Soil and Field Management Practices: methods used in organic farming to build and maintain soil fertility, preserve soil structure, conserve and recycle nutrients, reduce weed pressure, and reduce outbreaks of pest and disease;

Nutrient Management Planning: how to optimize the efficiency of nutrient cycling, improve resource utilization, and minimize nutrient loss on the farm;

Forages: organic methods of production for pasture, hay, silage, cover crops or green manure;

Row Crops: organic methods of production of cereal row crops (corn, sorghum), root crops (carrots, potatoes), seed legumes (soybean, peas, beans), and others (e.g., hemp); and

Small Grains and Oilseeds: organic methods of production of winter-seeded grains (winter wheat, winter rye), spring-seeded grains (spring wheat, oats and barley), oilseeds (canola, flax) and others.

Winter semester.

DE – only offered as a web-based distance education course.

AGRN3000 (PS300): Forage Crops (A, PDN)

Instructor: Prof. Martin

Prerequisite: AGRI1000

Preparatories: BIOL2002, BIOL2003

Study of principal characteristics and requirements of forage crops, and the production of forages for pasture, hay, silage, cover crops, or green manure. Emphasis will be given to forages in multiple cropping systems and rotational grazing systems, and the ability to critically read publications pertaining to forage crops.

Fall semester – 3 lecs and 2 labs per week.

Offered in alternate years; next offered in 2005/2006.

AGRN3001 (PS305): Grain Production (A, PDN)

Instructor: Prof. Caldwell

Prerequisites: AGRI1000, BIOL1000

Preparatory: BIOL2002

Study of cereals, pulses, oilseeds, and other grains; their classification, adaptation, distribution, culture, improvement, seed production, handling, grading, and utilization.

Fall semester – 3 lecs and 2 labs per week.

Offered in alternate years; next offered in 2006/2007.

AGRN3002 (PS325): Potato Production (A, PDN) DE

Instructor: Prof. Asiedu

Preparatory: BIOL2002

History, biosystematics, and ecophysiology of the crop are reviewed. Seed selection and manipulation, planting and crop management, post-harvest handling and storage practices are studied in detail. Soil fertility, crop health management strategies, and nutritional qualities are covered. Biotechnology applications to cultivar development, maintenance, and multiplication are also outlined. Production practices for seed, table, and processing stock and marketing in Atlantic Provinces are examined in detail and some commercial operations visited.

Winter semester – 3 lecs and 2 labs per week.

DE – also offered as a web-based distance education course

AGRN4000 (PS405): Agronomy (A, PS)

Instructor: Prof. Caldwell

Prerequisites: AGRN3000, AGRN3001, PLSC4001

The objective is to review and integrate material from prerequisite subjects on field crop production, soils, climate, and basic sciences into crop management systems. Students successfully completing this course will qualify to be identified as agronomists.

Winter semester – 3 lecs per week.

Animal Health Technology

AHVT0100 (AS60): Animal Nursing – Clinical Practices I

Instructor: Prof. Ramsay

This classroom and practical course introduces the Animal Health Technology (AHT) student to the profession and to the clinical environment. Classroom and practical topics introduced include: Safety in the Animal Clinic; Animal and Facilities Maintenance; Veterinary Hospital Routines and Procedures; Veterinary Medical Terminology; Veterinary Clinical Equipment; Disease and Disease Control; the AHT Profession; Metric-SI. This course enables the student to: perform certain procedures with clinical equipment; begin to use veterinary medical terminology; provide supervised care for small animals; maintain small animal facilities under supervision; describe principles of disease control and prevention; use Metric-SI in the veterinary medical context. Clinical equipment and procedures dealt with include: minor items such as the clinical thermometer, nail clippers, hair clippers, hypodermic syringe and needle; large items such as the autoclave, anaesthetic delivery system; procedures such as the small animal TPR; administration of medication by the oral, otic and ophthalmic routes; nail and hair grooming. Some topics are developed further in later courses of the Clinical Stream. Basic First Aid and WHMIS training is included.

Fall Semester – 3 lecs and 2 labs per week.

AHVT0101 (AS61): Animal Nursing – Clinical Practices II

Instructor: Prof. Ramsay

Prerequisites: AHVT0100, BIOL0100

This course continues the clinical topics introduced in AHVT0100 and develops them further; it also introduces new topics. Veterinary Medical Terminology is continued and greater proficiency is required. Drug administration techniques are developed in classroom and clinical sessions, including subcutaneous injection. Concepts and practice of sample collection are developed. Clinical equipment and procedures continue with: surgical instruments and equipment; radiography machine operation; preparation for anaesthetic induction and monitoring equipment; bandage and splint materials. Dose and dose-rate clinical calculations are introduced. The concepts of client education and counselling are introduced with assignments on common diseases and other topics. Nutrition as it applies to dogs and cats is introduced. This course enables the AHT student to function in various areas in the veterinary clinic as an assistant.

Winter semester – 3 lecs and 2 labs per week.

AHVT0200 (AS62): Animal Nursing – Clinical Practices III

Instructor: Prof. Ramsay

Prerequisite: AHVT0101

This course continues the clinical topics introduced in AHVT0100 and AHVT0101 and introduces more. Classroom and clinical topics include: procedures dealing with anaesthesia, drug administration and sampling; surgical preparation and assistance; radiography exposure and processing. Other classroom topics return to veterinary medical terminology, veterinary practice safety, and clinical calculations at an expected higher level of performance. Various less-often-performed medical procedures are dealt with. Client education as a basis for describing procedures and other topics is continued. This course enables the student to perform various procedures and counsel clients on a limited basis.
Fall semester – 4 lecs and 4 labs per week.

AHVT0201 (AS63): Animal Nursing – Clinical Practices IV

Instructor: Prof. Ramsay

Prerequisites: AHVT0202, AHVT0204, AHVT0200

This course continues clinical nursing topics introduced earlier in the Clinical Courses stream and develops them further as it introduces new procedures and topics. These topics include: cardiovascular shock and fluid therapy; anaesthetic emergencies; pain management; electrocardiography; and dental disease. Small animal nutrition is continued with nutritional management of disease state. Veterinary medical terminology is revisited with high expectations of student performance. Diseases of the eye are briefly dealt with. Sample collection for the external laboratory is dealt with primarily as it pertains to histopathology specimens. This course provides students with enough competence and awareness of background principles to enter the practicum/externship period ready to learn on the job and improve their performance under supervision.
Winter semester – 4 lecs and 4 labs per week.

AHVT0202 (AS24): Principles of Disease

Instructor: Prof. Ramsay

Prerequisites: BIOL0100, MICR2000, AHVT0100

This classroom course is intended to lay a base for the student to continue to learn about disease in animals throughout the program and after graduation. The principles of pathology and pathophysiology are covered, and examples of diseases are used to demonstrate how AHTs should approach the study of diseases encountered in other courses and later in their careers. The terminology used in describing disease states is stressed.
Fall semester – 4 lecs per week.

AHVT0203 (AS36): Principles of Pharmacology

Instructor: Prof. Ramsay

Prerequisite: AHVT0200

In this classroom course the student learns about the major classes of drugs based on therapeutic activity. A base is built so that learning can continue whenever medications are encountered later in the program or in the AHT's career. Methods of drug action, metabolism and excretion, biological variability, and drug reactions are studied and pertinent legislation emphasized. Dispensing instructions are reviewed, and principles of maintaining drug inventories are examined. Various costing formulae used in veterinary practices are outlined and their application is simulated.
Winter semester – 3 lecs per week.

AHVT0204 (AS37): Laboratory Animal Care I

Coordinator: Prof. Ramsay

Designed to instruct the student in the proper care and handling of the laboratory animal. Characteristics and requirements of relevant species are reviewed. Additional techniques learned are those regularly used in research and teaching.

Fall semester – 2 lecs and 2 labs per week.

AHVT0205 (AS39): Veterinary Laboratory Techniques I

Coordinator: Prof. Ramsay

Prerequisite: MICR2000, CHEM0100

Corequisite: AHVT0202

In classroom and lab practical sessions this course covers a variety of techniques commonly required of the AHT in the veterinary hospital laboratory. Operation and maintenance of the microscope is reviewed; the skills required in the clinical laboratory pertinent to microbiology, parasitology, urinalysis, and certain aspects of blood analysis are practised. Various aspects of microbes and parasites significant in animal disease are dealt with in the classroom.

Performance in laboratory techniques should demonstrate observance of principles and good manual skills.

Fall semester – 4 lecs and 6 labs per week.

AHVT0206 (AS40): Support Services in Veterinary Practice

Instructor: Prof. Ramsay

Prerequisites: CSCI0100, AHVT0100

This course examines various aspects of veterinary practice especially as they affect the animal health technologist. The business, organizational, legislative, ethical, and economic aspects of veterinary practice are detailed. Support Services in Veterinary Practice enables the animal health technologist to perform vital non-clinical and non-laboratory functions. The animal health technologist gains an understanding of the economic, ethical, and legal basis for veterinary practice in Canada.

Fall semester – 3 lecs per week.

AHVT0207 (AS49): Veterinary Laboratory Techniques II

Coordinator: Prof. Ramsay

Prerequisites: AHVT0205, AHVT0202

Corequisite: AHVT0201

This course continues the general format of Laboratory Techniques I, concentrating on hematology, urine cytology, and certain serum chemistry techniques. Part of the classroom component is devoted to the changes in blood and urine values and cytology in disease. The skills dealt with in Laboratory Procedures I continue to be practised and evaluated in the lab component of this course. Terminal performance in laboratory techniques should demonstrate observance of principles and good manual skills.

Winter semester – 4 lecs and 5 labs per week.

AHVT0301 (AS99): Practicum – Animal Health Technology

Coordinator: Prof. Ramsay

Prerequisites: Completion of all courses in the first four semesters of the AHT program or permission of the Faculty of the Department of Plant and Animal Sciences. Completion of the credit for AS99 is required for admission to the final semester courses of the AHT program. No percentage mark is given for this course but credit is awarded upon satisfactory completion of all components. The AHT practicum involves off-campus learning experiences in workplace settings. Part 1 is an externship conducted by the Atlantic Veterinary College (AVC) at the University of Prince Edward Island; Part 2 involves one or more other externships. The student must complete a veterinary practice externship at an approved location. The student may also complete another externship in a non-practice (institutional) setting.

Part 1: The AVC portion of the practicum is offered in the early part of the summer.

Students attend this externship in two or more sections. Room and board during the externship and transportation to the AVC are the responsibility of the student. During this period, students

are given training in clinical areas of the AVC Veterinary Teaching Hospital (VTH). Students work with and learn from AHTs and other paraprofessional staff. Evening and night shifts are a large part of the AVC externship. A certificate is awarded for successful completion of this component of the AHT practicum.

Part 2: The veterinary practice portion of the practicum involves an externship in an approved private veterinary practice. Students locate these from a list of available practices supplied by NSAC. A new practice located by the student may be approved. Student-trainees normally earn a salary on this portion of the practicum as they gain experience in a variety of clinical and other relevant skills.

Students who wish to complete externships at other locations in addition to that in veterinary practice may do so as part of this Practicum course.

AHVT0302 (AS64): Animal Nursing – Clinical Practices V

Instructor: Prof. Ramsay

Prerequisite: AHVT0201

Corequisite: AHVT0304

This course is a capstone or consolidation course in veterinary clinical procedures and in related nursing topics generally. All techniques and procedures from earlier clinical stream courses are re-evaluated and higher standards are expected. Many topics are dealt with on a mini-seminar basis. Client counselling continues to be stressed in student assignments and seminars. Students serve as teaching assistants for other students in clinical practical sessions of AHVT0201. Upon completion of this course the AHT student should be able to join the veterinary practice as a graduate AHT and perform to entry-level standard in clinical areas. The student should also be able to complete and pass the Veterinary Technician National Examination (VTNE) in appropriate (clinical) domains.

Winter semester – 4 lecs and 4 labs per week. First offered 2005/2006.

AHVT0303 (AS59): Veterinary Laboratory Techniques III

Coordinator: Prof. Ramsay

Prerequisite: AHVT0207

This course provides the opportunity for final refinement and evaluation of clinical laboratory skills. The techniques learned elsewhere in the program are re-evaluated, and students are expected to have reached graduate-level performance upon completion of this course.

Winter semester – 3 lecs and 4 labs per week.

AHVT0304 (AS95): Animal Health Technology Project

Coordinator: Prof. Ramsay

Prerequisite/Corequisite: AHVT0301 or AHVT0300

This course is intended to give the student experience with project planning and execution. It also aims to refine the student's presentation skills to individuals and small groups. The product should be of value to the AHT Program, its students, or technicians in veterinary practice. Typical products include: educational materials in video or printable CD-ROM format; models or equipment that can be used in the program; surveys of employers and graduates. The student also prepares a poster board "sampler" and presents the final product to other students and staff members. During the semester, mini-seminars on various topics are used to help improve presentation skills.

Winter semester – 3 lecs and 1 tutorial per week.

AHVT0305 (AS71): Laboratory Animal Care II

Coordinator: Prof. Ramsay

Prerequisites: AHVT0201, AHVT0204

This course is designed to prepare AHT students to successfully complete the Canadian Association for Laboratory Animal Science provisional registration examination. The student will be instructed in special procedures involved in the maintenance and operation of an animal care facility. This will include: environmental control, monitoring animal health, maintaining animal and facility records, and procurement of feeds, supplies, and animals. Students are required to complete assigned periods of duty in the College's animal facility. Introductory techniques in laboratory animal anaesthesia and surgery are covered. This course stresses compliance with the Canadian Council on Animal Care Guidelines.
Winter semester – 3 lecs and 3 labs per week.

Animal Science

ANSC0100 (AS12): The Farm Workplace I

Instructors: Dept. of Plant and Animal Sciences Staff

Coordinator: Mr. Nicholson

Diverse aspects of the farm workplace will be covered, with the major emphasis on occupational health and safety, proper attention to protocols and standard operating procedures, relevant legal aspects, and workplace issues and relationships. Specific skills instruction will cover equipment calibration, the use of selected tools, safe equipment and machinery operation, and the fundamentals of farm operations. Troubleshooting and decision-making as relevant to safety and maintenance will also be emphasized. The skills may be learned on the campus, on approved farms, or at other institutions pending approval by the Department of Plant and Animal Sciences.
Fall semester – 1 lec and 3 labs per week.

ANSC0101 (AS13): Farm Animal Production and Practices I

Instructors: Dept. of Plant & Animal Sciences Faculty and Staff

Coordinator: Mr. Nicholson

This course discusses the study of farm animals with the major emphasis on livestock production and management of meat animals. This will include growth, dairy, egg and broiler production, fur production, and livestock housing as it relates to the life cycles of farm animals. Farm animal welfare and its importance to everyday livestock production will also be discussed. The lab topics will emphasize meat and milk production as well as livestock handling, management skills, livestock measurements and evaluation, livestock records and their use on the farm. The practices will build on the concepts covered in lecture and lab and will enable the student to develop some competency in the husbandry skills necessary for working on livestock farms. Available only to Animal Science Technician students.
Fall semester – 3 lecs, 2 labs and 6 hours practice per week.

ANSC0102 (AS14): Farm Animal Production and Practices II

Coordinator: Mr. Nicholson

Prerequisite: ANSC0101

A study of farm animals with the major emphasis on livestock feeds and feeding technology, farm animal reproduction and animal health as related to the life cycle of farm animals and the principles of farm animal production. Diverse aspects of farm animal production will be covered. The practices will require Animal Science Technician students to expand on the concepts covered in the lectures and to further develop competency in their livestock management skills. These skills will include livestock measurements and evaluation, data collection and recording, observation, and facilities maintenance. Available only to Animal Science Technician students.
Winter semester – 3 lecs, 2 labs and 6 hours practice per week.

ANSC0103 (AS16): Farm Animal Production I

Instructors: Dept. of Plant and Animal Sciences Faculty

Coordinator: Mr. Nicholson

A study of farm animals with the major emphasis on anatomy, growth, lactation, egg production, fur production, and livestock housing as related to the life cycle of farm animals and the principles of farm animal production. The course will enable students to discuss livestock production and apply biological principles relevant to livestock production. Lab topics will emphasize livestock handling, safety around livestock, stockmanship and management skills, livestock measurements and evaluation, data collection, livestock records, and environmental aspects. Diverse aspects of farm animal production will be covered, but the focus will be on providing a general background, rather than on specific disciplines or on specific types of livestock production.

Fall semester – 3 lecs and 2 labs per week.

ANSC0104 (AS18): Farm Animal Biology I

Instructors: Dept. of Plant and Animal Sciences Faculty

Coordinator: Mr. Nicholson

A study of Farm Animal Biology with the major emphasis on the fundamental principles of anatomy, physiology, genetics, and nutrition. The course will enable students to describe the biological life cycles of farm animals and to relate the principles of biology to farm animal production. Diverse aspects of animal biology will be covered, but the focus will be on providing a general background, rather than on specific disciplines or on specific types of livestock production.

Fall semester – 3 lecs and 2 labs per week.

ANSC0105 (AS20): Farm Animal Breeding

Instructor: Prof. Patterson

The course covers the basic principles of Mendelian and quantitative genetics as they apply to farm animal production. Breeds and improvement programs are discussed for each species. Specific topics include selection procedures and recording programs, computer simulation of breeding programs, and applications of biotechnology.

Fall semester – 3 lecs and 2 labs per week.

ANSC0106 (AS22) : The Farm Workplace II

Instructors: Dept. of Plant and Animal Sciences Staff

Coordinator: Mr. Nicholson

Prerequisite: ANSC0100

Diverse aspects of the livestock farm as a workplace will be covered with the major emphasis on occupational health and safety, workplace ethics, proper attention to protocols and standard operating procedures, relevant legal aspects, and workplace issues. Specific skills instruction will cover fundamental tool, equipment and machinery operation and maintenance in the following areas: safety around electrical systems, livestock water supply, manure handling and storage, weather maintenance, feeding equipment maintenance, and building sanitation. Students will be expected to achieve competence in these skills, as well as in troubleshooting and decision-making as related to safety and maintenance. The skills may be learned on campus, on approved farms, or at other institutions pending approval by the Department of Plant and Animal Sciences.

Winter semester – 1 lec and 3 labs per week.

ANSC0107 (AS26): Farm Animal Biology and Practices I

Instructors: Dept. of Plant and Animal Sciences Faculty and Staff

Coordinator: Mr. Nicholson

A study of Farm Animal Biology with major emphasis on fundamental principles of anatomy, reproductive and environmental physiology. The course will enable students to describe the biological life cycles of farm animals as they relate to farm animal production. The practices will require Animal Science Technician students to expand on the biological concepts covered in the lectures. The practices will also emphasize detailed lab instruction in anatomy and structure, biological features of the productive animal as well as measurements, evaluation, observations and environmental monitoring.

Available only to Animal Science Technician students.

Fall semester – 3 lecs, 2 labs and 6 hours practice per week.

ANSC0108 (AS27): Farm Animal Biology and Practices II

Instructors: Dept. of Plant and Animal Sciences Faculty and Staff

Prerequisite: ANSC0107

The major emphasis is on the fundamental principles of animal nutrition and digestive physiology, reproductive physiology and animal health. Diverse aspects of animal biology will be covered, but the focus will be on providing a general background, rather than on specific types of livestock production. The practices will require Animal Science Technician students to expand on the biological concepts covered in the lectures and to develop competency in the skills necessary for an application of biological principles to livestock management practices. Lab topics will emphasize detailed instruction in anatomy and structure, biological features of the productive animal, livestock measurements and evaluation, observations, and environmental monitoring.

Available only to Animal Science Technician students.

Winter semester – 3 lecs, 2 labs and 6 hours practice per week.

ANSC0109 (AS66): Farm Animal Production II

Instructors: Dept. of Plant and Animal Sciences Staff

Coordinator: Mr. Nicholson

Prerequisite: ANSC0103

A study of farm animals with the major emphasis on livestock feeds and feeding technology, farm animal reproduction, farm animal breeds and breeding systems, and animal health as related to the life cycle of farm animals and the principles of farm animal production. The course will enable students to discuss livestock production and to apply biological principles relevant to livestock production. Diverse aspects of farm animal production will be covered, but the focus will be on providing a general background, rather than on specific disciplines or on specific types of livestock production.

Winter semester – 3 lecs and 2 labs per week.

ANSC0110 (AS68): Farm Animal Biology II

Instructors: Dept. of Plant and Animal Sciences Staff

Coordinator: Mr. Nicholson

Prerequisite: ANSC0104

The major emphasis is on the fundamental principles of animal nutrition and digestive physiology, farm animal genetics, reproductive physiology, and animal health. The course will enable students to describe the biological life cycles of farm animals and to apply biological principles to farm animal production. Diverse aspects of animal biology will be covered, but the focus will be on providing a general background, rather than on specific disciplines or on specific types of livestock production.

Winter semester – 3 lecs and 2 labs per week.

ANSC0111 (AS65): Project-Seminar

Coordinators: Profs. Firth and Miller

Provides an opportunity to examine, in detail, specific agricultural topics of interest to the students. Projects are organized and carried out by the students under the supervision of various staff members. Students are required to start their projects at the beginning of the fall semester.

Winter semester – 2 labs per week.

ANSC0200 (AS76): Farm Animal Production III

Instructors: Dept. of Plant and Animal Sciences Staff

Coordinator: Mr. Nicholson

Prerequisites: ANSC0101, ANSC0102, ANSC0107, ANSC0109, ANSC0110

A detailed study of selected areas in farm animal production, with the major emphasis on the principles and theory underlying current management practices. Students will be expected to achieve competence in selected managerial, learning, and problem-solving skills, and to develop an understanding of the application of biological and management principles to livestock production practices. Management of specific classes of livestock management will be studied in the context of reproduction and breeding, animal genetics, feeding and applied animal nutrition, housing and environmental physiology, animal health, livestock products, processing and sales, and production costs. The relationships among these subject areas and the integration of the farm as a whole will also be covered, with emphasis on how the enterprise fits into the Atlantic Canadian agricultural industry.

Fall semester – 6 lecs and 2 tutorials per week.

ANSC0201 (AS77): Farm Animal Production III Practices

Instructors: Dept. of Plant and Animal Sciences Staff

Coordinator: Mr. Nicholson

Prerequisites: ANSC0100, ANSC0102, ANSC0106, ANSC0107

Corequisite: ANSC0200

A detailed study of selected areas in farm animal production, with the major emphasis on production and farm operation skills. Students will be expected to achieve competence in the skills, farm operations, and routines associated with reproduction and breeding, animal genetics, feeding and applied animal nutrition, housing and environmental physiology, animal health, and livestock marketing. The course will cover individual subject areas as they coincide chronologically with the normal management activities on the College farm. The subject areas will also represent the divisions important in commercial production systems.

Fall semester – 16 labs per week.

ANSC0202 (AS86): Farm Animal Production IV

Instructors: Dept. of Plant and Animal Sciences Faculty

Coordinator: Mr. Nicholson

Prerequisite: ANSC0200

A detailed study of selected areas in farm animal production, with the major emphasis on the principles and theory underlying current management practices. Students will be expected to achieve competence in selected managerial, learning and problem-solving skills, and to apply biological and management principles to livestock production practices. Management of specific classes of livestock will be studied in the context of reproduction and breeding, animal genetics, feeding and applied animal nutrition, housing and environmental physiology, animal health, livestock products, processing and sales, and production costs. The relationships among these subject areas and the integration of the farm as a whole will also be covered, with emphasis on how the enterprise fits into the Atlantic Canadian agricultural industry.

Winter semester – 6 lecs and 2 tutorials per week.

ANSC0203 (AS87): Farm Animal Production IV Practices

Instructors: Dept. of Plant and Animal Sciences Staff

Coordinator: Mr. Nicholson

Prerequisites: ANSC0106, ANSC0200, ANSC0201

Corequisite: ANSC0202

A detailed study of selected areas in farm animal production, with the major emphasis on production and farm operation skills. Students will be expected to achieve competence in the skills, farm operations and routines associated with reproduction and breeding, animal genetics, feeding and applied animal nutrition, housing and environmental physiology, animal health, and livestock marketing. The course will cover individual subject areas as they coincide chronologically with the normal management activities on the College farm. The subject areas will also represent the divisions important in commercial production systems.

Winter semester – 16 labs per week.

ANSC0300 (AS90): Technology Project

Coordinator: Prof. Anderson

This project provides an opportunity for the students to study in detail an animal science topic of special interest. This must be a new topic, but may build on other aspects of the study program. The student pursues studies under a project supervisor. The project plan developed with the advisor must include the purpose of the study, the procedures and materials used, a time schedule for the work involved, the method by which the information will be collected, the way in which comparisons and conclusions will be developed, and the format for the final report. Both a written and an oral report will be required. The mark is normally reported in the student's final semester, but studies should commence early in the first semester.

Time – to be announced.

ANSC1000 (AS202): Organic Livestock Production (A, AS) DE

Instructor: TBA

This course provides information on organic livestock production in general, as well as more detailed analyses of organic beef and sheep, dairy, and swine and poultry production. An in-depth study of organic approaches to livestock health is included. The course is divided into five stand-alone modules: Introduction to Organic Livestock Production, Organic Beef and Sheep Production, Organic Dairy Production, Organic Swine and Poultry Production, and Health Management in an Organic Livestock System. A variety of information delivery methods will be used, including text on the Internet, a printed resource guide, and a CD-ROM with video clips and slide shows. Students will be encouraged to participate in discussion groups and use the organic information resources currently available over the Internet. Evaluation will be based on participation, written assignments, module quizzes and a final exam.

Winter semester.

DE – only offered as a web-based distance education course.

ANSC2000 (AS200): Animal Agriculture I (A, AS)

Instructors: Profs. Farid and Fredeen

Prerequisite: AGRI1000

An introductory course dealing with the major animal industries and production systems in animal agriculture today, with emphasis on systems relevant to Atlantic Canada. A key objective of this course is to let students see how real farms and real agribusinesses work. Emphasis will be placed on management and production of beef cattle, sheep, and dairy animals. Additional animal industries that are particularly seasonal in nature, e.g. fur growth and pelting, may be introduced as is appropriate.

Fall semester – 3 lecs and 3 labs per week.

ANSC2001 (AS201): Animal Agriculture II (A, AS)

Instructors: Profs. Anderson, Rathgeber and Rouvinen-Watt

Prerequisite: AGRI1000

Recommended: ANSC2000

A continuation of Animal Agriculture I, emphasizing the management and production of poultry, swine, fur and alternative species.

Fall semester – 3 lecs and 3 labs per week.

ANSC2002 (AS240): The Horse: Its Biology and Use (A, AS)

Instructor: Prof. Tennessen

Prerequisite: Second-year standing or equivalent in any program

This course is an introduction to the behaviour, anatomy, nutrition, and history of horses. What behavioural principles underlie horse training? How is their performance influenced by their conformation? What is unique about their digestive system? How did horses evolve? The course will include discussion of sources and treatment of illness and disabilities, and the biology and control of common parasites; demonstrations of English and Western riding (students will not be taught to ride); visits to the Truro Raceway; study of the importance of shoeing to the working horse; and exposure to the use of horses as draft animals.

Fall semester – 2 lecs and 2 labs per week.

ANSC2003 (AS241): Companion Animal Behaviour (AS)

Instructor: Prof. Tennessen

In this course, students will study the fundamentals of animal learning and how those principles affect success in training and behaviour modification. Attention will be given to understanding and solving behaviour problems (e.g. separation anxiety, dominance aggression, fighting, inappropriate urination, and behavioural stereotypes). The focus is on companion animals – dogs and cats, and to some extent horses. The normal development of behaviour in those species will be covered.

Winter semester – 3 lecs per week.

ANSC3000 (AS310): Animal Breeding (A, AS)

Instructor: Prof. Patterson

Prerequisites: GENE2000, STAT2000

The course covers variation in animal performance and the techniques whereby genetic superiority can be recognized and improved. Goals and programs of improvement are discussed with reference to commercial farm species. The emphasis is on programs in current use but applications of new technologies are included. Laboratories deal primarily with data collection, analysis, and computer applications.

Winter semester – 3 lecs and 2 labs per week.

ANSC3001 (AS320): Animal Health (A, AS)

Instructor: T. Semple

Prerequisite: MICR2000

Seeks to impart an understanding of animal health and its importance in livestock production enterprises. Students are taught to recognize signs of health and ill-health and to understand the principles and practices of disease prevention and treatment. Conditions of disease and ill-health common in Atlantic Canada are studied. The need for veterinary collaboration is emphasized, and the circumstances in which this should be sought are discussed.

Winter semester – 3 lecs and 2 labs per week.

ANSC3002 (AS341): Domestic Animal Behaviour (A, AS)

Instructor: Prof. Tennessen

Prerequisite: BIOL2006 or BIOL3005

A study of the behaviour of farm animals. The course presents information that is relevant to the care and management of animals. Topics covered include domestication, animal communication, social behaviour, reproductive and maternal behaviour, development of behaviour, genetics of behaviour, and the influence of management systems and practices on behavioural characteristics. Considerable attention is also given to welfare issues in animal agriculture.

Fall semester – 3 lecs and 2 labs per week.

ANSC3003 (AS345): Eggs and Dairy Products (A, AS)

Instructor: Prof. Firth

The nature and composition of eggs and milk and their products such as cheese and yogurt; hygiene, processing, and storage.

Fall semester – 2 lecs and 2 labs per week.

ANSC3004 (AS350): Meat Science (A, AS)

Instructor: Prof. Firth

Growth of meat animals and the nature of muscle, bone, and fat; conversion of muscle to meat; quality and grading of fresh meat; hygiene and storage; meat processing, meat products, and by-products.

Winter semester – 2 lecs and 2 labs per week.

ANSC3005: Animal Welfare (A, AS)

Instructor: Prof. Tennesen

Prerequisite: at least third-year standing

Preparatory: PHIL3000

This course deals with the well-being of animals, with emphasis on farm animals. Issues include what we mean by animal welfare, what the animal welfare issues are in modern agriculture and in modern society, and how we use ethology and physiology to assess animal welfare. The course outlines the international efforts to improve on-farm animal welfare. There is a term-project in which students attempt to assess animal welfare in a particular farm (or other) environment, and all students will participate in class debates on current issues in animal welfare.

Winter semester – 3 lecs and 2 labs per week.

Offered in alternate years; next offered 2006/2007.

ANSC4000 (AS490) Topics in Animal Production I (A, AS)

ANSC4001 (AS492) Topics in Animal Production II (A, AS)

Instructors: Dept. of Plant and Animal Sciences Faculty

Coordinator: Prof. Tennesen

Prerequisites: ANSC3000, BIOL3008, NUTR3000

These courses are offered both semesters and the content may vary from year to year. The course number reflects whether it is the first or second time a student is enrolled (i.e. the first time a student takes this production course, it will be ANSC4000; the second time, ANSC4001).

Each course consists of 3 four-week modules on applied topics in animal production. These modules will focus on the application of the sciences of genetics, physiology or nutrition to animal production in the Atlantic Provinces. Occasionally modules may be offered outside regular class time, but this will be indicated prior to sign-up. Students should see the course coordinator for selection and availability of modules prior to enrolling. Some modules may have restricted enrollment.

Fall and Winter semesters – 3 lecs and 3 labs per week.

ANSC4003: Avian Production Systems (AS)

Instructor: Prof. Rathgeber

Prerequisites: ANSC2001, NUTR3000

This course will focus on management of commercial poultry from hatching to the production of value-added products. The course material will require the application of the sciences of nutrition, genetics, physiology, and behavior to understand the key aspects of growth, reproduction and health of commercial poultry species.

Winter semester – 3 lecs and 3 labs per week.

Aquaculture

AQUA2000 (AS210): Introduction to Aquaculture (A, AS)

Instructors: Dept. of Plant and Animal Sciences Faculty

Coordinator: Prof. Enright

Prerequisite: AGRI1000

The history and the current status of world aquaculture production are discussed, with emphasis on species with potential in Atlantic Canada. Advances in freshwater or marine finfish and shellfish culture are included. Aquatic plant production is discussed. Business aspects of aquaculture are introduced. The course includes field trips to aquaculture and related facilities. Fall semester – 3 lecs and 3 labs per week.

AQUA3000 (AS370): Fish Health (A, AS)

Instructor: Prof. Duston

Prerequisite: BIOL3005

This course outlines concepts of disease with special reference to fish. Diseases of various etiological types are considered, with emphasis on those in the aquaculture environment. The relationships of management and economics to disease in cultured fish are detailed, and public health concerns are addressed. Diagnostic, prophylactic, and treatment methods are outlined and practiced.

Winter semester – 3 lecs and 3 labs per week.

AQUA4000 (AS440): Finfish Production (AS)

Instructor: Prof. Duston

Prerequisites: NUTR3000 or NUTR3001, AQUA3000, BIOL3006

Aspects of breeding and genetics, fish management, financial management, economics, marketing, housing systems, and water management are presented in an integrated approach to provide a sound understanding of this aspect of aquaculture. Management of finfish throughout the life cycle is presented. The course includes a weekend field trip to commercial farms; attendance is obligatory.

Fall semester – 3 lecs and 3 labs per week.

AQUA4001 (AS445): Shellfish Production (AS)

Instructor: Prof. Enright

Prerequisites: NUTR3000 or NUTR3001, AQUA3000, BIOL3005

Factors affecting profitable production of shellfish are discussed in the context of developing a sound industry with potential to address future opportunities. A survey of culture techniques used in shellfish production is undertaken.

Winter semester – 3 lecs and 3 labs per week.

Art

ARTS2000 (H230): Nature's Image: A Survey of Landscape Art (H)

Instructor: TBA

This course will provide an introduction to the history of art forms depicting landscape with the major focus being on landscape painting. The course will consist of art history lectures and a studio component in which drawing techniques, collage, and colour theory will be explored. Students will develop skills in composition and will gain an increased appreciation for landscape art traditions.

Fall semester – 3 lecs/studio per week.

Biology

BIOL0100 (B15): Animal Anatomy

Instructor: Prof. Crosby

A study of vertebrate anatomy, with emphasis on laboratory, farm, and companion species. The clinical significance of anatomical structures will be stressed.

Fall semester – 2 lecs and 3 labs per week.

BIOL0101 (B40): Plant Pathology

Instructor: TBA

An introductory course dealing with the nature, cause, and control of plant diseases due to infectious and noninfectious agents. Labs deal with basic techniques used in plant pathology, including fungal and bacterial isolation, identification, and inoculation.

Winter semester – 2 lecs and 3 labs per week.

BIOL0102 (PS45/B41): Plant Physiology and Stress Management

Instructor: Prof. Percival

This course is aimed at gaining an insight into various plant physiological, growth, and developmental processes and to develop a fundamental understanding and appreciation as to how various environmental factors influence growth, differentiation, and developmental processes in plants. The course also examines the impact of various abiotic stresses on plant growth and development, yield and productivity including acclimation and adaptation techniques. Emphasis will be given on plant diagnosis.

Winter semester – 3 lecs and 2 labs per week.

BIOL0103 (B46): Weed Science

Instructor: Prof. Sampson

Deals with the principles of weed science. Included are discussions on weed recognition and chemical and non-chemical approaches to controlling weeds in various agricultural crops as well as in lawns and non-crop areas. Selection, safe use, handling, and storage of herbicides are stressed.

Winter semester – 3 lecs and 3 labs per week.

BIOL0200 (B43): Entomology

Instructor: Prof. Le Blanc

An introduction to the study of the phylum Arthropoda, with particular reference to the class Hexapoda (Insecta), emphasizing insect pests of the North-East. Anatomy, physiology, taxonomy, behaviour, and ecology of insects are considered during lectures and laboratory

work. Discussions on the relation of insects to humans, basics of insect control methods, and pesticide safety are included.

Fall semester – 2 lecs and 2 labs per week.

BIOL1000 (B100): Botany

Instructor: Prof. Olson

An introduction to the fundamental concepts of land plant biology with an emphasis on sexual reproduction. Topics include eucaryotic cell organization, cell divisions, multicellularity, alternation of heteromorphic generations, homosporous and heterosporous. In addition, representatives of the major phyla are examined in relation to the overall diversity of the Kingdom Plantae. The topics presented in the laboratory reinforce the lectures through specific examples and applications.

Fall semester – 3 lecs and 3 labs per week.

BIOL1001 (B110): Zoology

Instructor: Prof. Crosby

A general introduction to zoology. Topics include animal cells and tissues, animal form and function, reproduction and development, evolution, and the diversity of both the Animalia and Protista.

Winter semester – 3 lecs and 3 labs per week.

BIOL2000 (B200): Cell Biology

Instructor: Prof. Crosby

An introduction to cell biology. Topics include cell metabolism, the structure and function of organelles of the eucaryotic cell, cell growth, cell movement, and the procaryotic cell.

Specialized cell functions will also be discussed.

Fall semester – 3 lecs per week.

BIOL2001 (B201): Cell Biology Laboratory

Instructor: TBA

This course combines the lectures of BIOL2000 with a laboratory section. Students will participate fully in BIOL2000 and, as well, complete laboratory sessions to complement lecture material. Students may receive credit for only one of BIOL2000 or BIOL2001.

Fall semester – 3 lecs and 3 labs per week.

BIOL2002 (B260): Plant Physiology

Instructor: Prof. Percival

A study of the different functions of the plant, including growth, photosynthesis, mineral nutrition, water relations and translocation of solutes, and plant orientation, development, and reproduction.

Winter semester – 3 lecs and 3 labs per week.

BIOL2003 (B265): Systematic Botany

Instructor: Prof. Olson

Preparatory: BIOL1000 or equivalent

The general principles and concepts of vascular plant systematics with emphasis on the angiosperms are examined. Botanical nomenclature, methods used in plant identification, classification schemes, sources of taxonomic evidence, and the evolution of major taxa are among the topics presented in the lectures. The laboratory focuses on the recognition of certain local taxa and provides experience in the collection, identification, and preparation of herbarium specimens from the local flora. Students planning to enrol in this course are expected to make a collection of pressed plants during the preceding summer.

Fall semester – 3 lecs and 3 labs per week.

BIOL2004 (B270): Structural Botany

Instructor: Prof. Olson

The basic morphology and anatomy of the seed plants are presented from a developmental perspective. The structural aspects of the various modes of plant reproduction are also included. Emphasis is placed on obtaining an understanding of plant structure that will complement crop physiology, weed biology, and plant pathology.

Winter semester – 3 lecs and 3 labs per week.

BIOL2005 (B300): Principles of Plant Pathology (A)

Instructor: Prof. Gray

This course deals with the principles of plant pathology and the control of diseases caused by bacteria, fungi, mycoplasma-like organisms, viruses, and nematodes. Labs deal with basic techniques used in plant pathology, such as fungal, bacterial, and nematode isolation, identification, and inoculation.

Fall semester – 3 lecs and 3 labs per week.

BIOL2006 (AS230): Mammalian Physiology (AS)

Instructor: Prof. MacLaren

Corequisite: CHEM3001

An introduction to the body systems and how they function. The student should develop a basic understanding of physiological processes and how they are regulated and integrated by the nervous and endocrine systems. Topics covered include: homeostasis, the nervous, muscular, endocrine, cardiovascular, respiratory, renal and digestive systems, and an introduction to environmental physiology.

Winter semester – 3 lecs and 3 labs per week.

BIOL3000 (B320): General Entomology (A)

Instructor: Prof. Le Blanc

Preparatory: BIOL1001

An introduction to the science of entomology from an agricultural perspective. Insect anatomy, physiology, and taxonomy are considered; also included are discussions on insect behaviour, reproduction, life cycles, and population ecology. Basics of monitoring techniques and population dynamics are illustrated.

Fall semester – 3 lecs and 3 labs per week.

BIOL3001 (B330): Ecology

Instructor: Prof. Nams

Prerequisites: BIOL1000, BIOL1001

An introduction to the principles and general concepts of ecosystem structure and function is presented. The dynamics of populations and community interactions are considered in relation to various biotic and abiotic environmental influences. The laboratory reinforces topics covered in the lectures and readings by emphasizing the importance of field observation and interpretation.

Fall semester – 3 lecs and 3 labs per week.

BIOL3002 (B335): Weed Science (A)

Instructor: Prof. Sampson

Prerequisite: BIOL1000

Preparatory: BIOL2002

Deals with the principles of weed science. Included are discussions on weed recognition, and chemical and non-chemical approaches to controlling weeds in various agricultural crops, as well as in lawns and non-crop areas. The selection, safe use, handling, and storage of herbicides are stressed, along with the environmental impact of the different methods of weed control.
Fall semester – 3 lecs and 3 labs per week.

BIOL3003 (B340): Comparative Vertebrate Anatomy

Instructor: Prof. Crosby

Prerequisite: BIOL1001

An introduction to comparative anatomy. Emphasis is placed on analyzing vertebrate structure. Comparisons of form and function within the Vertebrata are discussed with an evolutionary perspective. This is supplemented in the laboratory by detailed dissections of representative vertebrates.

Fall semester – 3 lecs and 3 labs per week.

Offered in alternate years; next offered in 2006/2007.

BIOL3004 (AS335): Environmental Physiology (A, AS)

Instructor: Prof. Tennessen

Prerequisite: BIOL2006 or BIOL3005

A study of animals in relation to their environment. The influence of environmental factors on body processes and their relationship to productive efficiency in intensive production systems are examined. Major topics include temperature regulation and body homeostasis, biological rhythms, photoperiodism, and environmental and hormonal interrelationships.

Winter semester – 2 lecs and 2 labs per week.

Offered in alternate years; next offered in 2005/2006.

BIOL3005 (AS380): Physiology of Aquatic Animals (A, AS)

Instructor: Prof. Duston

Prerequisite: BIOL1001

The form, function, physiological integration, and behaviour of major types of aquatic animals is considered. Emphasis is placed on Classes of organisms, using commercially important species as primary examples.

Fall semester – 3 lecs and 3 labs per week.

BIOL3006 (AS375): Aquatic Ecology (AS)

Instructor: Prof. Enright

Prerequisite: ENGN2004

The biology of aquatic species in marine and fresh water environments is discussed. Biological systems involving farmed species are emphasized. Organism interdependencies and interactions are examined. An introduction to the principles of ecology at the community and ecosystem level of integration is included.

Fall semester – 3 lecs and 3 labs per week.

BIOL3007 (PS390): Insects and Diseases of Landscape Plants (PS)

Instructor: TBA

The objective of this course is the study of the common insects and diseases of concern in the urban forest and ornamental trade in Atlantic Canada. For each taxa reviewed, signs, symptoms (distant, close and detailed), life cycle, life habits, hosts, range, monitoring methods, and management are considered through an integrated approach. Group learning may involve case studies of important insects and diseases. Also discussed are symptoms caused by abiotic factors.

Winter semester – 3 lecs and 2 labs per week.

BIOL3008 (AS330): Growth, Reproduction and Lactation (A, AS)

Instructor: Prof. MacLaren

Prerequisite: BIOL2006

A continuation of BIOL2006, emphasizing physiological systems relevant to animal production. Major topics include growth and development as it applies to meat and brood animal production, and the physiology and management of reproduction and lactation in domestic species.

Fall semester – 3 lecs and 2 labs per week.

BIOL4000 (AS460): Avian Biology (A, AS)

Instructor: Prof. Rathgeber

Prerequisites: ANSC2001, GENE2000, CHEM3001 (or CHEM2005)

This course is a study of topics in biology of special relevance to the commercial use of avian species. Physiological, biochemical, and genetic control and manipulation of such processes as reproduction, growth and development, and immunity are examined.

Fall semester – 3 lecs and 2 labs per week.

Offered in alternate years; next offered 2005/2006.

BIOL4001 (AS470): Animal Cell Culture (AS)

Coordinator: Prof. MacLaren

Prerequisite: BIOL2001

The objective of this course is to provide a theoretical and practical understanding of the uses and methods of animal cell culture. Lectures and laboratories will demonstrate the requirements of animal cells for normal growth and differentiation, the use of cell cultures as research models and for clinical, pharmaceutical and cytotoxicity screening will be discussed, as well as the commercial use of animal cell culture for the production of biological compounds.

Winter semester – 2 lecs and 4 labs per week.

BIOL4002 (B435): Conservation Biology

Instructor: Prof. Nams

Prerequisite: BIOL3001

This course has limited enrolment.

This course will examine the ecological concepts underlying current issues in conservation biology. Topics covered include effects of agricultural habitat fragmentation on wildlife, conservation of biodiversity, stability and resilience of ecosystems, optimum design of nature reserves, and habitat heterogeneity. This is a discussion-style course concentrating on current published papers.

Winter semester – 3 lecs per week.

Chemistry

CHEM0100 (CS14): Agricultural Chemistry

Instructor: Prof. Miller

Stresses the application of basic chemistry to the agricultural industry. Topics include chemical arithmetic; protection chemicals; sewage disposal; explosives; energy; iron; useful materials from the earth, sea, and air; chemurgy; water; metallurgy; nuclear chemistry; and chemical hazards. Students are also introduced to organic chemistry and applied biochemistry and are taught to identify carbohydrates, proteins, fats, oils, and the vitamins, enzymes, hormones, and nucleic acids.

Fall semester – 3 lecs and 2 labs per week.

CHEM1000 (CS101): General Chemistry I

Instructor: Prof. Crowe

Prerequisite: Successful completion of academic Grade 12 Chemistry or equivalent

This course is designed to help students understand chemical equations, reactions, and calculations. The chemistry of aqueous media is highlighted (properties of water, ionization of weak electrolytes, buffers). In addition to the traditional classroom interaction, students will be exposed to problem-based learning and co-operative learning. Students will be exposed to the proper use of various analytical equipment and apparatus. The laboratory will focus on the development of practical lab skills applicable to the agricultural and environmental industries.

Fall semester – 3 lecs and 3 labs per week.

CHEM1001 (CS102): General Chemistry II

Instructor: Prof. Crowe

Prerequisite: CHEM1000

This second semester of General Chemistry will include a theoretical understanding of atomic and molecular structures. An understanding of physical equilibria will be extended to practical applications of chromatographic analyses.

Winter semester – 3 lecs and 3 labs per week.

CHEM2000 (CS201): Organic Chemistry I

Instructor: Prof. Hoyle

Prerequisite: CHEM1001 (or old CS100)

This course provides an introduction to the structure and reactions of organic compounds. The course is approached from a mechanistic point of view and has particular emphasis on appropriate spectroscopy (IR and MS). The topics covered in this course include chemical bonding, isomerism, acid-base properties and the isolation and purification of organic compounds. The classes of organic compounds covered will include alkanes, alkenes, alkynes, simple aromatics, organohalides, alcohols and related compounds.

Laboratory work will include introductory techniques of organic chemistry and both HPLC and gas chromatography.

Fall semester – 2 lecs, 1 tutorial and 3 labs per week.

CHEM2001 (CS202): Organic Chemistry II

Instructor: Prof. Hoyle

Prerequisite: CHEM2000 (or old CS110)

This course continues building on work begun in CHEM2000. Functional groups included here will be carbonyls (aldehydes, ketones, acids, and their derivatives), more complex aromatics, simple organometallics and bifunctional organic compounds. The emphasis on mechanistic chemistry will continue, as will the study of appropriate spectroscopy (MNR and UV-Vis). In addition, an introduction to organic syntheses and biomolecules will be undertaken.

Winter semester – 3 lecs per week.

CHEM2002 (CS212): Analytical Chemistry I

Instructor: Prof. Crowe

Prerequisite: CHEM1001 (or old CS100)

This course will equip the non-chemistry major with an understanding of the basis of quantitative analytical chemistry, including relevant laboratory technique. Included will be both non-instrumental (gravimetry) and instrumental techniques (UV-visible spectrophotometry, atomic absorption spectrophotometry, HPLC, GC, and potentiometry). The course will focus on

proper sample preparation, analysis, data interpretation and proper laboratory technique. The examples used throughout the course would be from the environmental and agri-food areas.
Fall semester – 3 lecs and 3 labs per week.

CHEM2003 (CS275): Food Chemistry I (A)

Instructor: Prof. Hoyle

Prerequisite: CHEM2000 (or old CS110)

An introductory study of the chemistry of food and food components. The emphasis will be on water, fats, proteins and carbohydrates (and related compounds) with an overview of vitamins, minerals and additives. Methods of analysis will be discussed in detail and thus will be augmented by hands-on laboratory experiences with these analytic procedures.

This course may not be taken for credit by students who have credit for CHEM2004.

Fall semester – 3 lecs and 3 labs per week.

CHEM2004 (CS276): Introductory Food Chemistry (A)

Instructor: Prof. Hoyle

An introductory study of the chemistry of food and food components. The emphasis will be on water, fats, proteins and carbohydrates (and related compounds) with an overview of vitamins, minerals and additives. Methods used for analysis of food components will be discussed in detail.

This course may not be taken for credit by students who have credit for CHEM2003.

Fall semester – 3 lecs per week.

CHEM3000 (CS301): Biochemistry

Instructor: Prof. Robinson

Prerequisite: CHEM2000

The major emphasis of this course will be to study the characteristics of the building block biomolecules that make up the macromolecules in living cells. The course will also cover how these building blocks are assembled to form the major macromolecules. The importance and function in living cells of selected macromolecules of the major classes will be examined.

Fall semester – 3 lecs and 3 labs per week.

CHEM3001 (CS302): Biochemical Pathways

Instructor: Prof. Robinson

Prerequisite: CHEM2000

The major focus of this course will be on the biochemical pathways and activities that account for the assimilation, transformation, degradation and synthesis of the major macromolecules in living cells. Catalytic as well as regulatory strategies used by living cells will also be discussed. The biochemical pathways involved in the metabolism of proteins, lipids and carbohydrates will be covered as well as the biochemical importance of the macromolecules DNA and RNA. The final topic will be to examine and understand how metabolism consists of highly interconnected biochemical pathways and how hormones play a major role in regulating varying aspects of cellular metabolism.

Winter semester – 3 lecs and 3 labs per week.

CHEM3002 (CS310): Radiotracers in Agriculture (A)

Instructor: Prof. Robinson

Prerequisites: CHEM1001 (or old CS100) and MATH1000

This course has limited enrolment.

This course sets forth the concepts of radioactivity necessary for the practical use of radiotracers in agriculture, covering radiation theory; radiation counting; sample preparation techniques for counting; applied tracer techniques in soil, plant, and animal studies; isolation and identification of isotope labels; and localization of labels in molecular structures.

Winter semester – 3 lecs and 3 labs per week.

CHEM3003 (CS318): Advanced Integrated Chemistry Laboratory I

Instructor: Prof. Hoyle

Prerequisite: CHEM2001 (or old CS211 or old CS316)

The course will cover advanced laboratory topics in the fields of inorganic, general, and organic chemistry. Whenever possible these topics will be chosen from the fields of environmental science or agriculture. In particular, the use of spectroscopic techniques for the identification of chemical compounds will be applied, where appropriate.

Fall semester – 4 labs per week.

Offered in alternate years; next offered in 2005/2006.

CHEM3004 (CS341): Instrumental Analytical Chemistry II

Coordinator: Prof. Hoyle

Prerequisite: CHEM2002

For one course credit, students will select four different modules (3 weeks each) from the module offerings. At the discretion of the module coordinator, modules may have a tutorial component in place of a laboratory component. Students interested in taking this course should indicate their interest to the Course Coordinator by the end of the sixth week of the semester preceding the semester in which they wish to take module offerings. Maximum and minimum students in a module will be determined on an individual module basis.

Fall or Winter semester – 3 lecs and 3 labs or tutorials per week.

CHEM3005 (CS342): Instrumental Analytical Chemistry III

Instructors: Dept. of Environmental Sciences Faculty

Coordinator: Prof. Hoyle

Prerequisite: CHEM3004

Students who have successfully completed four modules as part of CHEM3004 may opt to take another four modules for a credit in CHEM3005. Students interested in taking this course should indicate their interest to the Course Coordinator by the end of the sixth week of the semester preceding the semester in which they wish to take module offerings. Maximum and minimum students in a module will be determined on an individual module basis.

Fall or Winter semester – 3 lecs and 3 labs or tutorials per week.

CHEM3006 (CS360): Mammalian Biochemistry

Instructor: Prof. Robinson

Prerequisite: CHEM2000 (or old CS110)

A study of how basic biochemical principles are applied to gain insight into the molecular functions of the diverse mammalian organ systems. The subject matter is divided into three parts: (1) Body Fluids and Their Constituents, which includes such subjects as blood coagulation, the complement system, the immune system, and their control; (2) Specialized Tissues, such as connective tissue, nervous tissue, and muscle tissues; and (3) Biochemistry of the Endocrine System, with the focus on the principles of endocrine biochemistry and the mechanisms of hormone action. The topics covered include general principles and mechanisms of hormone action, prostaglandins, the thyroid gland, and the gonads, as well as the hypothalamus, hypophysis, and adrenals.

Winter semester – 3 lecs per week.

CHEM3007 (CS375): Food Chemistry II (A)

Instructor: Prof. Crowe

Prerequisite: CHEM2003 or CHEM2004

This course, which builds on CHEM2003 (or CHEM2004) will provide an in-depth study of minor food components including vitamins, colorants (natural and artificial), nutraceuticals and textural

agents. Beneficial and/or deleterious interactions between food components will be examined (Maillard, caramelization, rancidity and enzymatic reactions). Recent advances in processing technology will be introduced.

This course may not be taken for credit by students who have credit for CHEM3008.

Winter semester – 3 lecs and 3 labs per week.

CHEM3008 (CS376): Intermediate Food Chemistry (A)

Instructor: Prof. Crowe

Prerequisite: CHEM2003 or CHEM2004

This course, which builds on CHEM2003 (or CHEM2004), will provide an in-depth study of selected food components including vitamins, colorants (natural and artificial), nutraceuticals and textural agents. Beneficial and/or deleterious interactions between food components will be examined (Maillard, caramelization, rancidity, and enzymatic reactions). Recent advances in processing technology will be introduced as time permits.

Offered concurrently with CHEM3007, and may not be taken for credit by students who have credit for CHEM3007.

Winter semester – 3 lecs per week.

CHEM3009 (ES312): Environmental Chemistry

Instructor: Prof. Hoyle

Prerequisite: CHEM2000 (or old CS110)

In this course students will undertake an in-depth study of the chemical processes involved in the pollution of the environment. Chemical pollution of the atmosphere, hydrosphere, and lithosphere will each be studied in depth. In each case, chemical solutions to these problems will be considered. Chemical processes such as dissolution, coordination, ion exchange, hydrolysis, ionization, and freezing point depression will be covered.

Winter semester – 3 lecs per week.

Offered in alternate years; next offered in 2005/2006.

CHEM4000 (CS436): Advanced Integrated Chemistry Laboratory II

Instructor: Prof. Hoyle

Prerequisite: CHEM3003 (or old CS211 or old CS316)

This course will cover specialized chemistry laboratory topics in the fields of inorganic, general, and organic chemistry. Whenever possible, these topics will be picked from the fields of environmental science or agriculture. The laboratory will have a significant project, chosen by the student in consultation with the instructor.

Winter semester – 5 labs per week.

Offered in alternate years; next offered in 2005/2006.

Communications

CMMT0100 (H45): Veterinary Practice Communication

Instructor: Prof. Sanderson

This course will focus on improving interpersonal communication skills. It will be designed specifically for students planning careers where contact with the public is essential. This course will deal with such topics as listening and interviewing skills, group dynamics, conflict management, meeting management, and basic teaching skills. Evaluation for the course will be based primarily on projects.

This course is open to all technicians, and is required for students in the Animal Health Technology program.

Winter semester – 1 lec and 2 labs per week.

CMMT0101 (H60): Communication Skills

Instructor: Prof. Sanderson

This course has limited enrolment.

The purpose of this course is to encourage the development of students' communication skills. The course will concentrate on improving students' speaking skills plus incorporating audiovisual materials. Creative presentation of ideas through exhibits, slide presentations, and video will be a focus of a number of the sessions. Guest speakers in the area of advertising and marketing will be invited. Evaluation for the course will be based primarily on a number of projects such as a slide-tape presentation.

Winter semester – 3 labs per week.

CMMT3000: Communication Theory and Skills (H)

Instructor: Prof. Sanderson

Prerequisite: at least second-year standing

This course is designed to provide students with the opportunity to enhance their communication skills and knowledge. Since a key requirement of today's job market is the ability to communicate effectively, students will be exposed to the theory and the practice of communication. An important component of the course will be the emphasis on the practical application of communication knowledge.

Winter semester – 3 lecs and 2 labs per week.

Computer

CSCI0100 (MP14): Computational Methods

Instructor: Prof. Bishop

A computer-based course to develop problem-solving and decision-making abilities and computational skills. The problems are of a scientific and managerial nature, emphasizing agricultural applications. The arithmetic and algebraic skills needed for the course are developed, as the need arises, through self-instructional modules.

Winter semester – 3 lecs and 2 labs per week.

CSCI1000 (MP222): Computer Methods

Instructor: Prof. Bishop

A course to develop problem-solving and decision-making abilities and computational skills using computer software. Problems of a scientific and managerial nature will be chosen from a variety of agricultural fields. The course will cover word processing, spreadsheets, databases, programming, statistics, communications, graphics, and process control. Industry-leading software will be used.

Fall and Winter semesters – 3 lecs and 2 labs per week.

CSCI2000 (MP220): Computer Science

Instructor: Prof. Bishop

Introduction to problem-solving methods and algorithm development. Emphasis is on designing, coding, debugging, and documenting programs, using C.

Fall semester – 3 lecs and 2 labs per week.

CSCI3000 (MP336): Data Structures and Numerical Methods

Instructor: Prof. Bishop

Prerequisite: CSCI2000

This course introduces the student to system analysis and software techniques. Topics covered include objects, stack, queues, multiple linked lists, searching and sorting algorithms and their implementation in the C++ programming language. The students use linear algebra and numerical methods in engineering examples while learning to implement properly structured solutions.

Winter semester – 3 lecs and 2 labs per week.

Economics

ECON0100 (EB13): Introductory Microeconomics

Instructor: Prof. Stackhouse

An introduction to the theory of the firm. The course examines the theory of demand and supply, distribution of income, forms of business organizations in Canada, and the levels of competition in the agricultural industry. Application of the various theories to explain the agricultural industry is stressed.

Fall semester – 3 lecs per week.

ECON0101 (EB12): Introductory Macroeconomics

Instructor: Prof. Yiridoe

Prerequisite: ECON0100

An introduction to the study of macroeconomics in a Canadian context. Topics covered include national accounts, public finance, money and banking, and international trade. Current problems in the Canadian economy are examined to emphasize the theory.

Winter semester – 3 lecs per week.

ECON1000 (EB110): Principles of Microeconomics (A) DE

Instructor: Prof. Dunlop

Comprehensive principles of microeconomic theory course, covering the market system, producer and consumer theory, environmental and resource economics, and international trade policy. Emphasis in this course is on the application of economics to issues and problems facing many countries and their citizens today. The approach is practical and “real-world”, using microeconomic theory to develop an understanding of the issues and problems being discussed, and the policy choices facing governments in dealing with these matters.

Fall and Winter semesters – 3 lecs per week.

DE – also offered as a web-based distance education course.

ECON1001 (EB255): Principles of Macroeconomics

Instructor: Prof. Grant

Prerequisite: ECON1000

This course introduces the student to basic macroeconomic concepts and to both short-term and long-term macroeconomic analysis. The basic macroeconomic concepts include economy-wide output, price level and inflation, asset prices and interest rates, international exchange rates among currencies, and the international balance of payments. The introduction to short-term macroeconomic analysis, or business-cycle analysis, is based on John Maynard Keynes' work on the 1929–33 Great Depression. The introduction to long-term macroeconomic analysis is based on Robert Solow's work on economic growth. Throughout the course macroeconomics is related to the historical experience of farmers and to contemporary macroeconomic forces affecting the agri-food sector.

Winter semester – 3 lecs and 1 tutorial per week.

ECON2000 (EB200): Intermediate Microeconomics

Instructor: Prof. Yiridoe

Prerequisite: ECON1000

A course in microeconomics at the intermediate level. Topics include the theory of the firm, consumer theory, markets and market structure, and externalities and public goods. All major concepts are presented graphically and some are studied using basic mathematics as well.

Fall semester – 3 lecs and 2 labs per week.

ECON2001 (EB305): Intermediate Macroeconomics

Instructor: Prof. Grant

Prerequisite: ECON1001

This course extends the Principles of Macroeconomics course to the intermediate level. Short-term, or business-cycle, macroeconomics is progressed from the introductory Keynesian income determination model to the IS-LM model, and then to the Aggregate Demand–Aggregate Supply model. The long-term macroeconomic content advances the introductory economic growth model in considering the relative importance of the factors determining the overall rate of economic growth. Throughout the course macroeconomic theory is related to macroeconomic policy goals, stabilizing the economy in the short term and promoting improvement in economic well-being in the long term.

Fall semester – 3 lecs per week.

ECON2002 (EB220): Production Economics (A)

Instructor: Prof. Tait

Prerequisite: ECON1000 or ECON0100

An introduction to the study of economic principles used to analyze production and resource use in agriculture. Areas of emphasis include economic examination of the factor/factor, factor/product, and product/product relationships of the farm production system. Practical examples and lab exercises are used to illustrate and reinforce the concepts presented in the classroom.

Winter semester – 2 lecs and 3 labs per week.

ECON3000 (EB260): Mathematical Economics

Instructor: TBA

Prerequisites: MATH1000, ECON2000

Introduction to the frequently used mathematical methods of economic analysis. The course provides the student with the basics required in more advanced economics courses. Areas of concentration include: elements of mathematical economic models, linear models and matrix algebra, applications of calculus to economic problems, and optimization theory.

Fall semester – 3 lecs, 1 tutorial, and 2 labs per week.

ECON3001: Environmental Economics

Instructor: Prof. Clark

Prerequisite: ECON2000

This course is designed to give students an understanding of how economists view environmental problems. Topics of study will include public versus private goods, externalities, market failure, and the role of property rights in the economic system. The Coase theorem will also be presented. Policy analysis contrasting market-based solutions to environmental problems with conventional solutions will be discussed. Specific topics will then be covered, including environmental policy surrounding water pollution, air pollution and climate change.

Fall semester – 3 lecs per week.

ECON3002 (EB320): Agricultural and Food Policy (A)

Instructor: Prof. Dunlop

Prerequisite: ECON1000 and at least second-year standing

This course introduces students to the structure of the agri-food industry and the process of policy and implementation. A critical assessment of the institutions (organizations, programs, and policies) in agriculture is the main focus of the course. Through guest speakers, students' presentations, interactive class discussions, and lectures, students will learn how policies are developed and who is involved in the policy development process. An historical appreciation for agricultural policy in Canada will be pursued with a critical assessment of these policies. In reviewing policy problems affecting the agri-food industry, students will examine possible solutions to these issues. Topics covered include: reasons for government intervention; historical development of agri-food policy in Canada; the policy process; players in agriculture and food policy; structure of provincial, federal, and cost-shared programs; consumers and food policy; resource and environmental policy; international agricultural and food policies; trade agreements; and agribusiness involvement in agriculture and food policy.

Winter semester – 3 lecs and 2 labs per week.

ECON3003 (EB325): Mathematical Programming

Instructor: Prof. Yiridoe

Prerequisite: ECON3000

An introduction to the theory and application of mathematical programming in the agri-food industry. The role of matrix algebra in determining linear programming solution procedures is developed. The information requirements, organization, and skills of model building are also introduced. The course will make extensive use of computer algorithms that permit students to model real-world systems in the production, resource supply, service and retail sectors of the agri-food industry.

Winter semester – 4 lecs and 1 lab per week.

ECON3004 (EB330): Agricultural Markets and Prices (A)

Instructor: Prof. Grant

Prerequisite: ECON2000

Designed to introduce students to agricultural market and price analysis. In general, course topics include econometric estimation of supply and demand relationships for agricultural commodities, applications of price theory, and discussion of pricing institutions in the agricultural industry.

Winter semester – 3 lecs and 2 labs per week.

ECON3005 (EB360): Econometrics

Instructor: Prof. Clark

Prerequisites: ECON2000, STAT2000

An applied course in statistics and economic theory using the classical linear regression model. Topics covered include a review of probability theory, estimation and specification of single and simultaneous equation models, violations of the assumptions of the classical linear model, hypothesis testing, and tests of significance. Exercises illustrating the statistical concepts developed in the lectures and applications of econometric techniques to agricultural economics problems and economic theory are provided and fully explained in the labs.

Fall semester – 3 lecs and 2 labs per week.

ECON4000: Advanced Microeconomics

Instructor: Prof. Clark

Prerequisites: ECON2000, ECON3000

This course is intended to give students an advanced treatment of Microeconomics. It is strongly recommended for those students wishing to undertake graduate work in economics, agricultural economics or resource and environmental economics. Topics will include production economics, profit functions, cost functions, supply functions and factor demand. An advanced treatment of demand theory will also be presented, including Hicksian and Marshallian demands, derived via Slutsky's equation. Both primal and dual approaches will be discussed.

Winter semester – 3 lecs and 2 labs per week.

ECON4001 (EB419): Agri-food Policy Analysis (A)

Instructor: Prof. Dunlop

Prerequisites: ECON2000, ECON3002

This capstone course will focus on the economic analysis of agricultural and trade policy, drawing on the different areas of study in agricultural economics. Students will learn how to synthesize economic theory with quantitative tools to solve agricultural and food policy problems. Use of the formal analytical methods of policy analysis is the main emphasis of the course. Students will read literature pertaining to policy problems and analysis; attempt their own analysis on policy issues; and critique the existing literature. Topics covered include: influential doctrines in agricultural policy; fundamentals of welfare theory; partial equilibrium analysis of agricultural and trade policy; social choice theory; basics of trade theory; export and import protection; and the political economy of agricultural and trade policy.

Fall semester – 3 lecs per week.

ECON4002 (EB441): Topics in Advanced Farm Management (A)

Instructor: Prof. Yiridoe

Prerequisites: ECON2000 and one of ECON3003, ECON3005, or STAT3000

A module course that introduces students to selected aspects of practical farm decision-making topics, with an orientation toward application of theoretical and analytical principles for identifying, analyzing, and solving farm business management problems. Topics include (but are not limited to) risk theory and risk management, economics of farming systems, and agribusiness project appraisal.

Winter semester – 3 lecs and 3 labs per week.

ECON4003: Resource Economics

Instructor: Prof. Clark

Prerequisite: ECON3000

This course will introduce students to the area of Resource Economics. Topics that will be discussed will include dynamic versus static optimization, renewable versus non-renewable resources, conservation and depletion, and sustainable development. Specific areas that will be covered will include forestry economics, fisheries economics, and global climate change.

Fall semester – 3 lecs per week.

English

ENGL0100 (H10): Technical Writing

Instructor: Prof. Sanderson

The objective is to provide instruction in basic scientific report and review paper writing; in grammar and spelling; in business letter writing with specific reference to the employment application letter and resume; and in the cultural, social, and historical background of agriculture and its related trades. Students must write a major term paper.

ENGL0100 is not equivalent to any 1000-level ENGL course.

Fall semester – 3 lecs per week.

ENGL1000 (H113): Composition (H)

Instructor: Prof. Stiles

This course has two primary objectives: to improve students' basic writing abilities and to offer training in scientific writing—in particular the literature review. The course consists of one lecture and one tutorial per week. Tutorials focus on building skills in composing, revising, editing, grammar, sentence structure, and mechanics; the lectures cover topics such as bias, essay forms, and the issues surrounding paraphrasing and citing. Students are required to write extensively throughout the term. A part of evaluation is based upon written work done under examination conditions during class.

Fall semester – 1 lec and 1 tutorial per week.

ENGL1001 (H101): The Novel (H)

Instructor: Prof. Stiles

In this course, four to six novels will be read, discussed, and analyzed. In the process, students will acquire a vocabulary for talking about literature, and will put to use critical reading and writing skills. They will also learn how the novel can be a window into the historical age in which it is written, illuminating issues such as colonialism, gender relations, culture, race, ethnicity, or the differences between rural and urban life. Novels selected will vary from year to year, but may include those written by Chinua Achebe, Emily Brontë, Kate Chopin, Joseph Conrad, Daniel Defoe, Charles Dickens, Antonine Maillet, Toni Morrison, Gabrielle Roy, Mary Shelley, Oscar Wilde, and others.

Winter semester – 3 lecs per week.

ENGL1002 (H102): Nature in English and American Literature (H)

Instructor: TBA

This course explores the ways in which nature has been represented in literature. Selected works by a number of authors of fiction, nonfiction and poetry will be examined, including English writers Dorothy Wordsworth, John Clare, William Blake, and William Wordsworth, and American authors Thoreau, Emerson, Hawthorne, Whitman, Melville, and Galway Kinnell.

Fall semester – 3 lecs per week.

ENGL3000 (H310): Literature of Atlantic Canada (H)

Instructor: Prof. Stiles

Prerequisite: ENGL1000 or ENGL1001 or ENGL1002

This course focuses on the prose and poetry of the Atlantic region of Canada. We will be looking at the works we read in historical, geographical and social context. We will also be discussing the concept of regionalism in literature. Classes will include lectures, films, videos, presentations, and discussions.

Fall semester – 3 lecs per week.

Engineering

ENGN0100 (AE14): Surveying

Instructor: TBA

An introduction to surveying principles and recording techniques. Students are given lectures and assignments to assist in understanding the principles employed in surveying, and they practice these during the labs by conducting various surveying exercises. Practice is gained in the proper use of surveying instruments (tape, level, and transit) through exercises involving

measurements of horizontal and vertical distances and angles. These include chaining, stadia, benchmark, profile and contour leveling, triangulation and traverse exercises, and construction surveying, with emphasis on their application to farm construction projects.

Fall semester – 2 lecs and 3 labs per week.

ENGN0101 (AE38): Horticultural Engineering

Instructor: TBA

Small gasoline engine structure and operating theory are studied, with emphasis on engine maintenance and troubleshooting. This course includes basic hydraulic theory, emphasizing the operation of common systems in use today. A wide range of horticultural machinery is studied, as well as the principles of mixing, placing, and curing concrete, fence making, and chain saw operation.

Winter semester – 2 lecs and 3 labs per week.

ENGN0102 (AE46): Soil and Water Resources Management

Instructor: Prof. Madani

This course examines the fundamentals of soil and water management with application to agriculture. The course deals with hydrology, erosion, irrigation and drainage systems, water quality related to agriculture, and water table management.

Fall semester – 2 lecs and 3 labs per week.

ENGN0103 (AE52): Agricultural Power Systems

Instructor: Prof. Rifai

Tractor engines are studied as well as the theory of power transmission in farm tractors and other agricultural vehicles. Principles of electric motors and their power transmission applications will also be studied. Maintenance and troubleshooting are included. Other farm power options will be considered, such as solar, wind, and water power.

Winter semester – 3 lecs and 3 labs per week.

ENGN1000 (AE101): Computer Aided Graphics and Projection

Instructor: TBA

Freehand sketching, instrument drawing, and Computer Aided Drafting (CAD) techniques are used to develop proficiency in understanding and communicating in the graphical language. Experience is gained in reading and drawing orthographic, isometric, and oblique projections of objects as well as sectional and auxiliary views. Both Architectural and SI units of linear measure will be used in producing scaled drawings.

Fall semester – 2 lecs and 3 labs per week.

ENGN1001 (AE102): Design and Graphics

Instructor: TBA

This course will provide students with experience in conceptual design, team work and utilizing CAD. Students will develop skills such as engineering freehand sketching, 3-D visualization and reading/production of engineering drawings. Communication via the graphical language will culminate in the presentation of design projects and solutions.

Fall semester – 2 lecs and 3 labs per week.

ENGN1002 (AE110): Statics

Instructor: Prof. Rifai

A one-semester course in applied mechanics covering the topic of the static equilibrium of particles, rigid bodies, machine elements, and structures under the action of forces. Emphasis is placed on the understanding of the fundamental principles of mechanics and their application to the solution of real problems in both two and three dimensions. Vector analysis and free body

diagrams are used extensively throughout the course. Specific topics include the equilibrium of particles and rigid bodies, forces in a plane and in space, equivalent force systems, equilibrium of rigid bodies in two and three dimensions, analysis of structures and machine elements, and friction. Additional topics such as distributed forces, centroids, centres of gravity, and moments of inertia will be covered as time allows.

Winter semester – 3 lecs and 3 labs per week.

ENGN1003 (AE120): Properties and Mechanics of Materials

Instructor: TBA

This course covers the properties of construction materials and machine parts and how these properties affect the performance of the materials in service. This course will also include information on force equilibrium, material stress, and modes of failure. The labs will offer both analytical and shopwork experiences. Load/deformation data for materials will be demonstrated as well as destructive testing. Cutting, fitting, and welding of metals will be practiced.

Winter semester – 3 lecs and 3 labs per week.

ENGN1004: Wood Construction Technology I

Instructor: TBA

An introductory course in the selection, operation, and maintenance of woodworking hand and power tools. The principles of selection, operation, and maintenance of workshop tools in the modern woodworking shop are studied. Students will be required to present seminars on various fabrication techniques and construction tools. Occupational Health and Safety issues pertaining to wood shop work procedures will be covered.

Winter semester – 2 lecs and 3 labs per week.

ENGN1005: Metal Construction Technology I

Instructor: TBA

This is an introductory course to familiarize students with common metal construction technologies, machines and tools used in a metal fabrication shop. The principles of welding and welding applications will be emphasized. Students will be required to present demonstrations on the use of various metal hand and power tools, as well as present a seminar on some form of metal fabrication technology. Occupational Health and Safety issues pertaining to metal shop work procedures will be covered.

Fall semester – 2 lecs and 3 labs per week.

ENGN2000 (AE200): Environmental Impacts and Resource Management (A)

Instructor: Prof. Blanchard

Prerequisites: BIOL1000, CHEM1001 (or old CS100)

This course is an introduction to environmental engineering and technology, emphasizing a quantitative engineering approach. The course addresses the issues associated with the safe and ecologically appropriate handling, processing, storage, and utilization of organic wastes arising from human activities, including agriculture and bio-resource production systems. Topics covered will include: growth models for populations of living organisms, as well as models for depletion and replenishment of natural resources; the concept of mass and energy balances applied to quantify changes in environmental systems; physical, chemical and biological unit operations for treatment and reduction of solid, liquid and gaseous wastes; and reduction of pollution impacts on air and water resources.

Labs will include visits to environmental treatment facilities.

Fall semester – 3 lecs and 3 labs per week.

ENGN2001 (AE202): Agricultural Machinery

Instructor: Prof. Rifai

Engineering principles of farm machinery are studied, including machinery for soil preparation, planting, crop care, and harvesting. Machines and their unit operations are analyzed with respect to function, work rates, material flows, and power usage. The importance of monitoring machine performance relating to work quality and environmental effects of machine operation will be studied. Labs will emphasize safety, basic maintenance, adjustment, calibration, and performance testing.

Winter semester – 3 lecs and 3 labs per week.

ENGN2002 (AE204): Introduction to Systems Analysis

Instructor: Dept. of Engineering and other NSAC Faculty

Coordinator: Prof. Sibley

Introduction to engineering principles associated with biological systems analysis. Sub-components of the system are identified and interrelationships are defined. The technical management of actual systems will include problem definition, information search, idea generation and development of practical solutions. Through the use of case studies and guest speakers, students will appreciate the systems approach to identify the role of technological, human, and other resources in the operation of rural enterprises. The course promotes skills in teamwork, relevant case studies, written and oral presentations and the use of computer-based decision support systems.

Fall semester – 3 lecs and 3 labs per week.

ENGN2003 (AE207): Food Processing Systems (A)

Instructor: Prof. Blanchard

Prerequisites: BIOL1000, CHEM1001

This course will present an overview of food processing systems. Physical, chemical and biological properties of foods relevant to processing preservation will be examined. An overview of various food processing unit operations will be presented; general design considerations for food plants to maintain hygienic processing conditions will be examined; and generic examples of food processing plant layout for various classes of food commodities, such as vegetables, fruits, seafood, meats, dairy, and baked goods, will be reviewed.

Winter semester – 3 lecs and 3 labs per week.

ENGN2004 (AE215): Aquacultural Environment (A)

Instructor: Prof. Blanchard

Principles necessary for understanding and providing optimal aquatic environments for aquaculture production are reviewed. Topics in water habitat management will be emphasized, including: water properties of both fresh- and salt-water systems; water quality and reconditioning techniques; maintenance of dissolved oxygen and removal of metabolic wastes in aquaculture rearing systems; and evaluation of water resource requirements for aquaculture.

Winter semester – 3 lecs and 3 labs per week.

ENGN2005 (AE230): Dynamics

Instructor: Prof. Rifai

Prerequisites: MATH1001, PHYS1000 or PHYS1002

The dynamics course represents the second class in the study of engineering mechanics. Topics include kinematics, kinetics, work and energy, and linear and angular impulse momenta of a single particle and of rigid bodies in planar motion. There will be some computer applications wherever appropriate.

Fall semester – 3 lecs and 3 labs per week.

ENGN2006 (AE260): Surveying

Instructor: Prof. Havard

An introduction to surveying principles and use of levels, transits and global positioning systems (GPS). Horizontal and vertical measurements for construction, profile and topographic surveys are introduced and lab exercises are stressed. Emphasis is on map preparation and interpretation, and introduction to AutoCad.

Fall semester – 3 lecs and 3 labs per week.

ENGN2007: Fluid Power Technology

Instructor: TBA

This course covers the subjects essential to understanding the design, analysis, operation, and maintenance of fluid power systems: hydraulic, pneumatic, and water. Emphasis is placed on the practical applications of fluid power and the functioning of system components such as reservoirs, pumps, compressors, motors, valves, filters, lines and hoses, and mechanical and electrical controls in typical fluid power circuits. The principles of fluid flow, pressure and force, energy conservation, and power in the context of using fluid energy to do useful mechanical work are covered. Theory is presented to emphasize how and why fluid power systems operate. General maintenance, safety and environmental issues associated with fluid power systems are also discussed.

Winter semester – 3 lecs and 3 labs per week.

First offered in 2006/2007.

ENGN2008: Digital Electronics and Computer Interfacing

Instructor: TBA

This course covers the theory and applications of digital electronics technology and the control of digital devices by computers and programmable logic controllers (PLCs). Digital technology has become the dominant method of communication, control, sensing, computation and amusement in modern society. This course will provide the foundation to better understand current and future digital systems. Digital logic circuits, data forms and applications are studied. Computers in the laboratory are used to interface with and control a variety of digital devices such as computer numerical controlled (CNC) machines, robotics, cameras, scanners, lab equipment, etc. Students are introduced to Visual Basic programming for interfacing with computer ports and analog input devices. Hands-on projects are completed to control real-world applications such as traffic lights, process control and experimentation equipment.

Winter semester – 3 lecs and 3 labs per week.

First offered in 2006/2007.

ENGN2009: Metal Construction Technology II

Instructor: TBA

Prerequisite: ENGN1005

This is an advanced course in metal construction technologies using power machines (including CNC) and tools used in a metal fabrication shop. Advanced principles of welding and welding applications will be emphasized. Students will be required to present demonstrations on the use of various power machines as well as design and construct a major metal project using the skills learned in both Metal Construction Technology courses.

Fall semester – 2 lecs and 3 labs per week.

First offered in 2006/2007.

ENGN2010: Wood Construction Technology II

Instructor: TBA

Prerequisite: ENGN1004

An advanced course in the operation and maintenance of woodworking hand and power tools, and shop machinery. Students will learn about specialized machinery and advanced joinery technologies. The operation, maintenance, and repair of workshop tools in the modern

woodworking shop are studied, with emphasis on re-alignment and setting up for accessories and jigs. Written work safety procedures will be reviewed. Individual projects are undertaken by students with the skills acquired in both Wood Construction Technology courses utilizing the shop equipment.

Fall semester – 2 lecs and 3 labs per week.

First offered in 2006/2007.

ENGN3000 (AE300): Electric Circuits

Instructor: Prof. Havard

Prerequisite: PHYS1003

Fundamentals of electric circuit analysis using Kirchoff's current and voltage laws, Thevenin's, Norton's, superposition and source transformation for DC and AC circuits. Circuit components include resistors, capacitors, inductors, voltage and current sources. Use of PSPICE simulation software, multimeters and oscilloscope in lab exercises to familiarize students with circuits analysis.

Fall semester – 3 lecs and 2 labs per week.

ENGN3001 (AE305): Engineering Measurements and Controls (A)

Instructor: Prof. Havard

Prerequisite: PHYS1000 or PHYS1002

The course examines the fundamentals for measurement of environmental parameters such as temperature, pressure, humidity, stress, and strain. The use of electronic instruments and microcomputers are demonstrated through laboratory exercises. Several methods of control are investigated.

Winter semester – 3 lecs and 3 labs per week.

ENGN3002 (AE310): Thermodynamics

Instructor: Prof. Havard

Prerequisite: PHYS1000 or PHYS1002

Thermodynamics is a study of energy and energy transfers in the form of work and heat, and the effect these transfers have on the properties of selected substances. First and second law analyses are covered, including entropy, availability, and efficiencies.

Fall semester – 3 lecs and 3 labs per week.

ENGN3003 (AE311): Technology for Precision Agriculture

Instructor: Prof. Adsett

Prerequisite: ENGN2006 or ENGN0100

This course will provide students with a fundamental understanding of the concepts and principles related to precision agriculture. This includes the technology and use of electronics in collecting and analyzing data with emphasis on spatial variability. Electronic sensors, monitoring instrumentation, computer equipment, machine controllers. Nutrient management systems, application of GPS-based surveys, precision farming software (e.g. SSToolBox), geographic information system (GIS) software utilization, and GPS hardware are examined.

Fall semester – 3 lecs and 3 labs per week.

ENGN3004 (AE312): Digital Circuits

Instructor: TBA

This course includes an introduction of Boolean algebra, encoders, decoders, shift registers, and asynchronous and synchronous counters, together with timing considerations. Design of asynchronous circuits, synchronous sequential circuits, and finite state machines is covered.

Karnaugh mapping techniques and state tables and diagrams are taught. Programmable logic is

introduced. Contemporary computer-aided design and analysis software is used throughout the course.

Fall semester – 3 lecs and 3 labs per week.

ENGN3005 (AE314): Fundamentals of Chemical Engineering

Instructor: TBA

The main objective of this course is to develop the students' ability to perform mass and energy balances on reactive and non-reactive processes. Introductory topics include systems of units and a study of process variables such as temperature, pressure and flow rate. Also covered are fundamental properties of multiphase systems: phase equilibrium, vapour pressure, phase rule, Raoult's and Henry's Laws, and colligative properties. Emphasis is placed on developing problem-solving skills.

Winter semester – 3 lecs and 2 labs per week.

ENGN3006 (AE315): Strength of Materials

Instructor: Prof. Adsett

Prerequisites: ENGN1002, MATH1001, and PHYS1000 or PHYS1002

This course presents an introduction to the basic principles of stress, strain, and stability, and the response of engineering materials to the application of force and force-induced effects. Topics include definition of stress-strain, stress-strain diagrams for ductile and brittle materials, axially loaded members, torsion, shear force and bending moment, stability and buckling, and biaxial stress and strain.

Winter semester – 3 lecs and 2 labs per week.

ENGN3007 (AE320): Structures and Their Environment (A)

Instructor: TBA

This is a general agricultural structures course that covers an introduction to design process and various topics related to the use of building materials. Ventilation principles are presented. Functional layouts of storage and production buildings are considered. Field trips supplement the lecture material. A term paper is required.

Fall semester – 3 lecs and 3 labs per week.

ENGN3008 (AE332): Circuit Analysis

Instructor: Prof. Havard

This course covers advanced circuit analysis techniques, starting with sinusoidal excitation. The concepts of phasors and complex impedance are fully developed. Mutual inductance and magnetically coupled coils are used to introduce transformer behaviour and performance. Real and reactive power flow is covered before the introduction of balanced three-phase circuits for power distribution. Symmetrical components are introduced as a means of dealing with unbalanced networks. The concepts of grounding and harmonics are also introduced.

Winter semester – 3 lecs and 3 labs per week.

ENGN3009 (AE335): Materials Handling and Processing (A)

Instructor: Prof. Adsett

Prerequisite: MATH1001

Preparatory: PHYS1000 or PHYS1002

Basic operations in on-farm materials handling and processing are covered. Operations are described mathematically and discussed in relation to material flow rates and energy requirements. Electric power is discussed with respect to on-farm distribution, demand sizing, controls, and safety. Laboratory topics include electric circuits, motors, pumps, grain drying, solid materials conveyors, and milking systems.

Fall semester – 3 lecs and 3 labs per week.

ENGN3010 (AE340): Soil and Water (A)

Instructor: Prof. Madani

Prerequisite: MATH1001

This course covers the hydrologic cycle and its components; basic soil-water-plant relationships; drainage theory and design; and irrigation systems and design. Crop water requirements, water supply, water conveyance, and salinity control are discussed. Emphasis is placed on water table management and agricultural water management.

Fall semester – 3 lecs and 3 labs per week.

ENGN3011 (AE350): Fluid Mechanics

Instructor: Prof. Madani

Prerequisite: ENGN2005 or permission of the instructor

A study of physical properties of liquids and gases, fluid statics, and fluid flow including pressure, manometry, hydrostatic forces, stream lines and tubes, continuity, momentum, Bernoulli equation, energy equation, flow measurement, viscous flow, and dimensionless numbers.

Winter semester – 3 lecs and 2 labs per week.

ENGN3012 (AE355): Principles of Agricultural Machinery (A)

Instructor: Prof. Sibley

The objectives of this course are: to discuss the methods and equipment used to accomplish the various operations employed in agricultural production; to present agricultural machines as a system of sub-components performing different functions; and to present the engineering principles governing the operation of machines used in agricultural production. Emphasis is placed on crop production machinery: tillage, planting, chemical and fertilizer applications, and different harvesting systems.

Fall semester – 3 lecs and 3 labs per week.

ENGN3013 (AE360): Aquacultural Engineering (A)

Instructor: Prof. Blanchard

Support facilities, equipment, and systems for aquatic production will be examined. Topics studied will include: selection of component materials and structures suitable for confinement, protection, and growth of aquaculture species; principles of design and selection of equipment for recirculation systems for aquaculture; and the principles of water flow and handling in open and closed conduits.

Winter semester – 3 lecs and 3 labs per week.

ENGN3015 (AE370): Irrigation and Drainage

Coordinators: Profs. Havard and Madani

This course examines basic soil/water/plant/atmosphere relationships. It introduces students to soil and water conservation and management principles. The course covers irrigation and drainage of golf courses, athletic areas, parks, and residential landscapes. Students who are required to take ENGN3010 may not take ENGN3015 for credit.

Fall semester – 2 lecs and 3 labs per week.

Offered in alternate years; next offered in 2005/2006.

ENGN3016 (AE380): Engineering Economy

Instructor: Prof. Adsett

This course deals with the economics of decision-making. After introducing fundamental concepts and cash-flow diagrams, interest factors are dealt with in some detail. A variety of discounted cash-flow techniques are covered, including rate-of-return calculations. Inflation, accounting, tax, and risk are also among the topics considered.

Winter semester – 2 lecs and 3 labs per week.

ENGN3017 (AE206): Design Project

Instructor: Prof. Sibley

Prerequisites: ENGN1001, ENGN3006

This self-study course provides a project-based exercise in the engineering design process. Students work in teams and as individuals on defined projects that utilize knowledge and skills in graphics, statics, computing, and mechanics of materials. The projects encompass conceptual design, detailed analysis, engineering drawings, experimentation, physical model fabrication, laboratory testing, and preparation of professional reports.

Winter semester – 4 labs per week.

ENGN3018: Technology Modules

Instructor: TBA

This course deals with the operating concepts of CNC machines, plastics forming and construction technology, and transportation technology in a modular format. Approximately 4 weeks will be allocated to the study of each module area. The students will be able to perform operations in each technology area upon completion of the appropriate module. Practical hands-on laboratory and shop experiences are emphasized, as are associated aspects of Occupational Health and Safety. Students will also make presentations to the class regarding specific features and operations of the technologies studied.

Winter semester – 5 lecs per week.

First offered in 2007/2008.

ENGN3019: Communications Technology

Instructor: TBA

This course addresses issues, systems and methodology in computer-related communications technology. Among the topics studied are desktop publishing, digital photography and image editing, video production, web page design, and presentation software usage. Supplementary classes in graphic design and screen printing will be available as time allows. Emphasis is placed on practical production techniques and individual design situations.

Fall semester – 5 lecs per week.

First offered in 2007/2008.

ENGN4000 (AE410): Water and Water Quality Management (A)

Instructor: Prof. Madani

Relationship between agriculture and water quality, chemical use, water quality monitoring techniques, animal waste and water quality, non-point source pollution, and best management practices to reduce chemical leaching to surface water and groundwater are discussed. Soil erosion, soil conservation practices, Universal Soil Loss Equation (USLE) and Revised USLE (RUSLE) are covered. Artificial wetland and its relation to agricultural and waste management is also discussed.

Winter semester – 3 lecs and 3 labs per week.

ENGN4001 (AE412): Water Quality Issues (A)

Coordinator: Prof. Madani

Prerequisite/Corequisite: ENGN4000

Current environmental water quality issues such as contamination of surface and ground water are discussed. Emphasis is placed on providing solutions to the water quality problems.

Agricultural water quality models will also be examined.

Winter semester – 3 lecs per week.

Offered in alternate years; next offered in 2005/2006.

ENGN4002 (AE420): Management of Mechanized
Agricultural Systems (A)

Instructor: Prof. Adsett

Prerequisite: MATH1001 or PHYS1000 or PHYS1002

Preparatory: MGMT2003

Principles of engineering economics are applied to agricultural investment alternatives, primarily as related to mechanized systems. Field operations from soil tillage to crop harvest are examined with respect to machine performance, power requirement, timeliness, and machinery selection. Effects of soil and climate are included. Laboratory sessions include problem tutorials and visits to selected farms. A term project applies the techniques presented in the course to practical management decisions in production or processing operations of the student's interest.

Winter semester – 2 lecs and 3 labs per week.

ENGN4003 (AE440): Senior Design Project for Engineers I

Instructor: Engineering Faculty

Coordinator: Prof. Sibley

Senior engineering students gain first-hand experience in applying design principles and practices by undertaking a real-world design project. Students are expected to display a high level of initiative and ingenuity in carrying out the project through its various design stages. As well, students will gain proficiency with an engineering project's written and oral communication requirements by keeping a project log book, preparing written project proposals and reports, and orally presenting their design project in a seminar format.

Fall semester – 1 lec and 5 labs per week.

Environmental Sciences

ENVS1000 (ES202): Basic Composting Skills (A) DE

Instructor: TBA

Composting and the utilization of organic matter produced on the farm provide the basis for soil fertility in organic systems; however, potential benefits derived from compost use are often limited by the supply and quality of on-farm produced composts. The objective of this Web-based course is to teach composting primarily by providing students with the opportunity to make their own compost over a period of 13 to 15 weeks. Students learn through five stand-alone modules*: Composting of Organic Materials (how the underlying principles of composting are applied when combining various feedstock materials for composting); Composting Process (how to evaluate and manage an actively working pile and troubleshoot to maintain optimum conditions for composting); On-Farm Composting (efficient and low-cost composting methods for agricultural composting at various scales); Compost Quality (how to evaluate the quality of the finished compost, as well as the quality requirements of various standards, markets, and end uses for compost); and Compost Utilization and Marketing (considerations and requirements for the optimum use of compost in organic greenhouse crop production and organic farming systems, as well as factors which are important in the marketing of compost).

- Note that making compost and completing all five modules will be a requirement for students who are taking the course for credit. Students who are not taking the course for credit may also decide to make compost and complete all five modules; however, this is not a requirement for non-credit students. To provide maximum flexibility for non-credit students, the modules are offered as independent (stand-alone) units. Students may take either ENVS1000 or ENVS4004 but not both for credit.

Fall semester.

DE – only offered as a web-based distance education course.

ENVS2000 (ES200): Environmental Studies I (A)

Instructors: Profs. Nams, Hoyle, and Madani

Coordinator: Prof. Brewster

Prerequisites: 8 technician, technology or degree course credits

This is the first of a two-semester course sequence that deals with environmental issues from both an agricultural and a socio-economic basis. The scientific principles of each issue will first be outlined and explained, and then the agricultural and socio-economic aspects of the issue will be examined. The topics to be emphasized in this course will include issues associated with population growth, the atmosphere, and the hydrosphere. Students will be expected to show their understanding of the interplay between agriculture and environmental issues by writing a major term paper.

Fall semester – 3 lecs and 1 tutorial per week.

ENVS2001 (ES201): Environmental Studies II (A)

Coordinator: Prof. Brewster

Prerequisite: ENVS2000

This is the second of a two-semester course sequence that deals with environmental issues from both an agricultural and a socio-economic basis. All aspects of the issues will be integrated together to provide an overall view of each issue. The topics to be emphasized in this course will include issues associated with biodiversity, the lithosphere, waste management, and legal aspects of the environment. Students will be expected to show their understanding of the interplay between agriculture and environmental issues by writing a major term paper.

Winter semester – 3 lecs and 1 tutorial per week.

ENVS3000 (B365): Environmental Impact

Instructor: Prof. Stratton

Prerequisites: ENVS2000, ENVS2001

An introduction to the study of environmental toxicity and ecotoxicology as they are used to predict the environmental impact of agricultural, industrial, and other xenobiotics and associated processes. The laboratory portion of the course will deal primarily with bioassay techniques.

Fall semester – 3 lecs and 3 labs per week.

Offered in alternate years; next offered in 2005/2006.

ENVS3001 (ES330): Environmental Sampling and Analysis

Instructors: Dept. of Environmental Sciences Faculty

Coordinator: Prof. Nams

Prerequisites: STAT3000, CHEM2000 (or old CS110)

This course will introduce students to the proper methods of sampling for biological and chemical analyses, as well as for environmentally oriented surveys. Several analytical methods will be introduced for chemical analyses, including spectrophotometry, electrochemistry (pH and ion selective electrodes), and chromatography. Emphasis will be given to the actual collection of samples and their subsequent analysis.

Fall semester – 3 lecs and 3 labs per week.

ENVS3002 (ES333): Waste Treatment and Site Remediation (A)

Instructor: Prof. Stratton

Prerequisite: ENVS2001

This course will examine the following topics: pollution from wastes, waste disposal and treatment, the use of wastes, wastes as resources, recycling, composting, waste reduction,

incineration, biomass from wastes, biogas production, site remediation, and bioremediation. Agricultural wastes will be emphasized throughout the course.
Winter semester – 3 lecs and 3 labs per week.

ENVS3003 (ES350): Environmental Studies Field Course

Coordinator: Prof. Hoyle

Prerequisites: 30 degree credits, including ENVS2000 and ENVS2001

This course is designed to provide students with an opportunity to pursue a holistic approach to solve real environmental problems. It will be of 12 days' duration and will be held at (an) environmentally significant site(s). Students will be expected to pre-plan and to perform on-site analyses to identify any environmental problems. An interim report of findings will be required during the course. After completion of the field work, students are expected to write a report of their findings with appropriate recommendations regarding solutions to identified problems.

Students should contact the course instructor prior to October 15 of the preceding Fall semester for scheduling information about the course. Expenses associated with the course are the responsibility of the student. The course is offered subject to enrolment.

Summer session – 12-day course.

ENVS3004 (B385): Principles of Pest Management (A)

Instructor: Prof. Sampson

Prerequisites: BIOL1000, BIOL1001

An investigation of the philosophy of pest management. Topics will include the study of different approaches to pest management and an assessment of the use of single versus integrated pest control options. Costs of pest control from economic, social, and environmental perspectives will be discussed.

Fall semester – 3 lecs and 3 seminar periods per week.

ENVS4000 (B405): Pesticides in Agriculture (A)

Coordinator: Prof. Sampson

Preparatories: BIOL2005, BIOL3000, BIOL3002

A course dealing with various aspects of pesticides used in agriculture. The course will look at pesticides from their origin and development to their registration, sale, distribution, and use. Also included are discussions of safety and toxicology.

Winter semester – 3 lecs and 3 discussion periods per week.

ENVS4001 (B406): Economic Plant Pathology (A)

Instructor: Prof. Gray

Prerequisite: BIOL2005

An in-depth study of the important plant diseases representative of the major groups of pathogens, with particular attention to diseases affecting field crops, fruit and vegetable crops, turfgrasses, and greenhouse crops. Labs deal with advanced techniques used in plant pathology, such as photomicroscopy, DIBA for virus identification, ELISA for fungal identification, and advanced mycological techniques.

Winter semester – 2 lecs and 3 labs per week.

ENVS4002 (B425): Economic Entomology (A)

Instructor: Prof. Le Blanc

Prerequisite: BIOL3000

An introduction to the study of economic entomology from an agricultural perspective.

Principles of insect control (natural, mechanical, physical, cultural, biological, and legal) are

covered. Includes chemical and biochemical control, and insecticide development, formulation, and application. This course stresses the theory of integrated pest management (IPM).
Winter semester – 3 lecs and 3 labs per week.

ENVS4003 (B445): Applied Weed Science (A)

Instructor: Prof. Sampson

Prerequisite: BIOL3002

Deals with principles of weed science from an ecological perspective. Included are discussions on ecology and management of weeds in traditional agro-ecosystems as well as in low-input sustainable agricultural systems. The roles of biological, cultural, and chemical control in these systems will be stressed.

Winter semester – 3 lecs and 3 labs per week.

ENVS4004 (CS457): The Science of Composting & Its Application (A)

Instructor: TBA

Prerequisite: CHEM1000 (or old CS100)

Principles of compost production, including the following factors: feedstocks, C:N, biological reactions, moisture, aeration, temperature, etc. Laboratory analysis of feedstocks and composts produced commercially and by the participants; evaluation of the process and bioavailability of nutrients in composts using growth-room potting studies; and environmental concerns – odour, organic and inorganic contaminants, pathogens, and heavy metals. Students may take either ENVS4004 or ENVS1000 but not both for credit.

Fall semester – 3 lecs and 3 labs per week.

Offered in alternate years; next offered in 2005/2006.

Extension Education

EXTE3000 (H320): Extension Education in the Rural Community (H)

Instructor: Prof. Sanderson

Prerequisite: at least third-year standing

The aim of this course is to provide students with a basic understanding of the principles and theories of extension education in rural society. The first part of the course will discuss trends in the rural community which affect the extension education process. Principles and procedures in conducting extension programs will be examined in the second part of the course. Through the utilization of guest lectures and class presentations, past and present extension efforts in the Maritimes will be analyzed in the final section of the course. Students will be required to prepare a major class presentation.

Fall semester – 3 lecs per week.

Offered in alternate years; next offered in 2006/2007.

EXTE3001 (H321): Leadership Development and the Social Action Process (H)

Instructor: Prof. Sanderson

Prerequisite: at least third-year standing

Students will be looking at leadership development from a number of angles: current theories, leader identification, and leadership skills. The impact of leadership on the social action process will be analyzed in the context of rural communities. Analysis of the social action process will focus on participatory approaches to rural community development and extension. Students will have the opportunity to enhance personal leadership skills through discussion and practice.

Fall semester – 3 lecs per week.

Offered in alternate years; next offered in 2005/2006.

Food Science

FOOD3000 (CS380): Food Quality Assurance (A)

Instructor: Prof. Crowe

Prerequisite: MATH1000

The various quality philosophies (QC, QA, TQM) will be studied with respect to their industrial application. The course will centre on the use of control charts to monitor processes and to evaluate the quality of both incoming raw materials and the finished product. Students will gain first-hand experience in the design and implementation of ISO 9000 and HACCP systems in the commercial food industry. The application of these principles to other manufacturing processes and/or data acquisition will be discussed. Consideration will also be given to recognizing the quality criteria required by some international customers.

Winter semester – 3 lecs and 3 labs per week.

French

FREN1000 (H130): French Language I (H)

Instructor: TBA

Prerequisite: Grade 12 French or equivalent within the last five years

This course is designed to fill the needs of students who have studied French in high school and is intended to review grammar and provide an opportunity to polish and refine language skills. Classes will emphasize basic grammatical structures, pronunciation, listening comprehension, and speaking skills. FREN1000 is designed to provide the student with opportunities to use the language and enhance written, spoken and comprehension skills. This course is not intended as an introduction to the French language. Students whose first language is French or who are fluent in the French language are not eligible to take this course.

Fall semester – 3 lectures per week.

FREN1001 (H131): French Language II (H)

Instructor: TBA

Prerequisite: FREN1000

This course is designed to fill the needs of students who have already studied French, and is intended to review grammar and provide an opportunity to refine language skills. Classes will emphasize basic grammatical structures, pronunciation, listening comprehension, and speaking skills. FREN1001 is designed to provide the student with opportunities to actively use the language. This course is intended not as an introduction to French language but as a continuation of FREN1000, a review of its major aspects. It is expected that students have a basis grasp of French grammar and some vocabulary. This course is not suitable for students whose first language is French or who are fluent in the French language.

Winter semester – 3 lecs and 2 tutorials per week.

Genetics

GENE2000 (B240): Genetics

Instructor: N. McLean

Study of heredity and variation in plants and animals, including man; the relationships of genetics to evolution and breeding practices.

Fall semester – 3 lecs and 2 labs per week.

GENE3000 (B370): An Introduction to Molecular Genetics

Instructor: Prof. Wang-Pruski

Prerequisites: GENE2000 and one course in biochemistry

The objective of this course is to provide students with a general foundation in molecular genetics and recombinant DNA technology. Replication, transcription, protein synthesis, recombinant DNA, and the regulation of gene expression in procaryotes and eucaryotes will be studied in detail. Ethical and legal issues related to the production, testing, and ownership of genetically engineered organisms will be discussed. In the laboratory, students will be exposed to a range of molecular genetic techniques, including isolation and restriction site mapping of bacterial plasmids, bacterial transformation, isolation and restriction enzyme digestion of genomic DNA, and PCR amplification. Students completing this course will be able to read original research papers in the molecular genetic literature, and will be prepared for advanced training in molecular biology, plant breeding, or animal breeding.

Winter semester – 3 lecs and 3 labs per week.

Offered in alternate years; next offered in 2006/2007.

GENE3001 (B375): Population and Quantitative Genetics

Instructor: Prof. Patterson

Prerequisites: GENE2000, STAT2000

An introduction to population and quantitative genetics, with particular emphasis on the forces causing genetic change in populations. Applications from natural populations, conservation biology, and plant and animal breeding will be used to illustrate theories of evolution and modern breeding methods. Contemporary ideas about evolution at both the molecular and organismal levels will be explored. Laboratory sessions include discussion of concepts and use of computer simulations to model populations under natural and artificial selection.

Winter semester – 3 lecs and 2 lab/discussion periods per week.

Offered in alternate years; next offered in 2005/2006.

GENE4000 (AS465): Molecular Applications to Animal Production (AS)

Instructor: Prof. Farid

Prerequisites: GENE2000, CHEM3001 (or CHEM2005)

This upper-level course is designed for students interested in the molecular and cellular techniques that are being applied to animal production systems and research. Topics include molecular techniques used in research, DNA fingerprinting, marker-assisted selection, embryo IVF/sexing/nuclear transfer, recombinant protein production, the use of recombinant microbes in ruminants, and stem cell and transgenic animal production.

Fall semester – 3 lecs and one 3-period lab or tutorial per week.

GENE4003: Biotechnology

Instructor: Prof. Wang-Pruski

Prerequisite: GENE2000

Biotechnology includes generation of new medicine, generation of biofuel, new chemicals and materials, removal of pollutants and production of better and safer foods. The objective of this course is to provide students with general information on the theory and technologies that are currently used in biotechnology. Course topics will include gene identification, transformation and expression regulations, tissue culture and cell culture techniques, and other genomics-

related agricultural applications. Nutraceutical and pharmaceutical applications will be addressed.

Winter semester – 3 lecs and 3 labs per week.

Offered in alternate years; next offered 2005/2006.

Geography

GEOG1000 (H170): Introductory Human Geography (H)

Instructor: TBA

This course is an introduction to the field of Human Geography. The objectives of the course are to present the spatial point of view on human/land interactions. Lectures, readings, and assignments consider geographical patterns, processes, and problems in rural and urban settings. Some emphasis will be given to the Canadian and Atlantic region contexts.

Winter semester – 3 lecs per week.

GEOG3000 (H370): Rural Geography (H)

Instructor: TBA

Prerequisite: GEOG1000

This course focuses on rural geographic problems in Canada and the Atlantic region. Discussion will include, for example, rural land use issues, settlement dynamics, rural resource problems, urban-rural interaction, agricultural change, rural well-being, and rural planning. The geographic perspective emphasizes spatial variability and human/land interactions.

Winter semester – 3 seminar hours per week.

Geology

GEOL2000 (CS230): Introduction to Geology

Instructor: Prof. Brewster

Topics covered in this course are: materials of the earth, structure of the earth and plate tectonics, and landscape development. Geological factors important in soil formation will be stressed. Labs include mineral and rock identification, topographic map interpretation, and a field trip.

Winter semester – 3 lecs and 3 labs per week.

History

HIST1000: Introduction to Canadian History I: 1000–1867 (H)

Instructor: TBA

This course introduces students to the theory and practice of history through a general historical survey of Canadian history for the period from approximately 1000 CE [Common Era] to about the mid-19th century. Historical theories and methodologies will be introduced in this course. A social and/or cultural approach is emphasized, with focus on Aboriginal peoples and Contact, Acadia and New France; British North America to Confederation.

Fall semester – 3 lecs per week.

HIST1001: Introduction to Canadian History II: 1867–Present (H)

Instructor: TBA

This course will examine the problem of modernity, through an exploration of Canadian history from the mid-19th century through to the present. Political, social, and cultural developments and transformations will be emphasized. In addition to the exploration of Canadian history from Confederation to the present, students will be introduced (or, in the case of those who have previously taken Introduction to Canadian History I, reintroduced) to concepts, theories and methodologies employed in historical study.

Winter semester – 3 lecs per week.

HIST3000 (H301): Rural History (H)

Instructor: Prof. Stiles

Prerequisite: H1000 or H1001

This course will introduce students to selected problems in the study of rural history. Problems to be considered in at least two time periods may include the following: the problem of change in rural society, vis-à-vis industrialization; the intersection of national, ethnic, and other "identity" with rurality; the changing nature of work in rural societies; rural political movements; idealizations or distortions related to the concept of rural; agriculture and other "cultures" in the rural context of the past.

Winter semester – 3 lecs per week.

Horticulture

HORT0100 (ES60): Landscape Plants I

Instructors: Profs. Morton & Olson

Herbaceous and woody plants are studied with respect to their identification, landscape value and use. Special groups of plants to be studied include plants with fall interest, shade-loving plants, groundcovers, and vines, as well as many other plants suited to Atlantic landscapes. The lab involves the study of plant families, plant morphology, use of plant keys, plant collecting and preparation of herbarium specimens. A plant collection is required.

Fall semester – 3 lecs and 2 labs per week.

HORT0101 (ES61): Landscape Plants II

Instructor: TBA

Herbaceous, woody, and aquatic plants are studied with respect to their identification, landscape value, and use. Special plant groups covered in the course include interior plants, culinary herbs, plants with special growth habits, native plants, and bog and marginal plants for aquatic gardens, in addition to many other plants for Atlantic landscapes. The recognition of deciduous woody plants by their winter wood characteristics is included.

Winter semester – 3 lecs per week.

HORT0102 (PS47): Turfgrass Production and Management

Instructor: Prof. Daniels

A study of cool-season turfgrasses, their characteristics, and proper usage. The establishment, maintenance, and renovation of turfgrass will be studied. Cultural topics covered will emphasize proper fertilizing, watering, and pest control.

Fall semester – 3 lecs and 2 labs per week.

HORT0103 (PS50): Landscape Horticulture I

Instructor: Prof. Goodwin

An introduction to landscape horticulture. Plant/environment interaction and the fundamental principles governing plant growth are discussed, as well as the functional uses of ornamental plants in the contemporary landscape. Laboratory exercises will concentrate on the basic skills associated with the use of plants in the landscape.

Fall semester – 3 lecs and 3 labs per week.

HORT0200 (PS38): Nursery Crop Production

Instructor: Prof. Mapplebeck

The course examines site selection; types of nurseries; nursery layout, facilities and equipment; and the production of field-grown and container-grown nursery stock. Proper handling of nursery stock by retailers and selling of nursery stock through garden centres are also covered.

Winter semester – 3 lecs and 2 labs per week.

HORT0201 (PS39): Greenhouse Crop Management

Instructor: Prof. Mapplebeck

This course covers site selection, types of greenhouses, heating systems, ventilation, growing media, watering and fertilization, environmental controls in the greenhouse, and the production of bedding plants, pot plants, cut flowers, greenhouse vegetables, and herbs. The laboratory section of this course includes visits to commercial greenhouse operations.

Fall semester – 3 lecs and 2 labs per week.

HORT0202 (PS43): Small Fruit Crops

Instructor: Prof. Ju

Berry crops studied include strawberries, raspberries, cranberries, blueberries, currants, gooseberries, grapes, and kiwis. All aspects of berry production, from planting to marketing, are covered. Course also includes visits to small fruit farms and certified strawberry nurseries.

Fall semester – 3 lecs and 2 labs per week.

HORT0203 (PS44): Tree Fruit Crops

Instructor: Prof. Ju

The culture and handling of apples, pears, peaches, plums, and cherries. Topics studied are soil management, propagation, training systems, pruning, harvesting, pest control, grafting and budding, storage, and marketing.

Winter semester – 3 lecs and 2 labs per week.

HORT0204 (ES62): Landscape Plants III

Instructor: Prof. Goodwin

Herbaceous, woody and aquatic plants are studied with respect to their identification, use, and value in landscape settings. Special plant groups included in the course include woodland plants, sensory plants, container plants, medicinal herbs, xeric plants, submerged and floating aquatic plants, and salt-tolerant plants, in addition to many other plants for Atlantic landscapes. The recognition of woody plants by their winter wood characteristics is included.

Fall and Winter semesters – 2 lecs per week.

HORT0205 (PS51): Residential Landscape Design and Construction

Instructor: Prof. MacKenzie

Prerequisites: ENGN1000, HORT0100, HORT0103, HORT0209

Residential landscape design and construction are studied. A systematic and practical approach to design is emphasized. Sketching is a component of this course. Students are taught both computer and conventional drafting to facilitate their design work.

Winter semester – 3 lecs and 3 labs per week.

HORT0206 (PS70): Landscape Techniques

Instructor: Prof. Goodwin

Prerequisites: HORT0102, HORT0103

This is a Spring semester course. Students will be required to work under contract in the landscape horticulture trade with an approved employer for a period of 12 weeks (480 hours). Contract content will include such areas of work as landscape construction, landscape maintenance, plant production, and sales, and will reflect the specialties of the employer.
Spring semester – 12 weeks.

HORT0207 (PS71): Arboriculture

Instructor: Prof. MacKenzie

Prerequisite: HORT0103

Emphasis is placed on arboriculture theory and practice. Tree problems arising from pest and disease injury, as well as environmental and non-parasitic injury of trees will be addressed. The course will focus on the tree in an urban environment. Laboratory exercises concentrate on specific arboriculture skills and techniques.

Fall semester – 3 lecs and 3 labs per week.

HORT0208 (PS72): Landscape Maintenance

Instructor: Prof. Goodwin

Prerequisites: ENGN0102, HORT0102, HORT0103

Provides an overview of site management. Time studies, scheduling of horticultural work, and management techniques are included. Plant health-care strategies, including pesticides and their application, are discussed, and provincial pesticide applicator exams are written in preparation for licensing. A calendar of landscape maintenance tasks will be developed by the student.

Winter semester – 3 lecs and 2 labs per week.

HORT0209 (PS73): Landscape Horticulture II

Instructor: Prof. Goodwin

Prerequisite: HORT0100

Prerequisite/Corequisite: HORT0103

A study of herbaceous plants and their uses in landscape. Special plant groups, gardening techniques and styles will be examined. Both computer and conventional methods of drafting will be utilized in design.

Fall semester – 3 lecs and 2 labs per week.

HORT0210 (PS74): Landscape Design and Construction

Instructor: Prof. MacKenzie

Prerequisite/Corequisite: ENGN0102

Advanced landscape planning and construction will be discussed. Such topics as site grading, paving, retaining walls, decks, landscape lighting, water features, commercial landscapes, and estimating are included. Students will be required to estimate material and labour requirements for lab projects and create construction drawings and specifications.

Winter semester – 3 lecs and 3 labs per week.

HORT2000 (PS200): Vegetable Production (A, PDN) DE

Instructor: Prof. Goodyear

Preparatory: AGRI1000 or PLSC0100

Production technology for the major vegetables grown in the Atlantic region are studied in detail, including botanical and horticultural characteristics, soil and fertility requirements, cultivar selection, pest management, and harvest and storage requirements. Commercial vegetable enterprises are visited.

Fall semester – 3 lecs and 2 labs per week.
DE – also offered as a web-based distance education course

HORT2001 (PS210): Principles of Organic Horticulture (A, PDN) DE

Instructor: Prof. Goodyear

Preparatory: AGRI1000 or PLSC0100

Study of the principles that form the basis for organic production systems. Special attention is given to soil fertility, organic soil amendments, compost and mulches, crop rotation, plant health, management of diseases and pests, companion planting, and produce storage/handling and marketing. Seminar topics will include making the transition to organic production, and definition and legislation of organic food in Canada.

Fall semester – 3 lecs and 3 labs/seminars per week.

DE – also offered as a web-based distance education course alternate years with on-campus course.

Next offered (on-campus only) Fall 2005; Next offered (DE only) Fall 2006.

HORT2002 (PS270): Landscape Horticulture Work Program I (PS)

Instructor: Prof. Goodwin

This is a Spring semester course. Students are required to work under contract in the landscape horticulture trade with an approved employer for a period of at least 12 weeks (480 hours minimum). Contract content may include such areas of work as landscape construction design and maintenance, plant production, turf maintenance, and plant sales. The content of the contract will reflect the specialties of the employer. Available only to B.Tech (Env. Hort.) students.

Spring semester – 12 weeks.

HORT2003 (PS290): The British Garden (PS)

Instructor: Prof. Goodwin

The history of British landscape development is studied, supported by visits to gardens that exemplify period design. Period garden features and the design philosophy that fostered the evolution of landscape development will be discussed. The maintenance and management of these landscapes will be examined. North American and British landscape maintenance standards and techniques will be compared. Plant identification will be a component of this course. This course involves self-directed study.

The course is offered in England, subject to enrolment. Expenses associated with the course are the responsibility of the student.

Summer semester – 4 weeks intensive.

HORT2004 (PS280): Introduction to Viticulture (PS)

Instructor: Prof. Percival

Prerequisite: BIOL1000 or BIOL0102

Note: Students taking this course must be 19 years of age or older. This course on viticulture in the Atlantic region will initially examine the taxonomy, morphology, physiology, and biochemistry of grapevine growth and fruit maturation. Emphasis will be placed on the environmental regulation of grapevine growth, development, yield and composition, and management strategies to optimize grape production in cool-climate viticulture production areas. Included will be an examination of the importance of site selection, soil management, grapevine cultivars, rootstocks, clones, production systems, and vineyard establishment.

Cultural management practices including pruning, training, canopy management, crop control, and mechanization will be discussed, and an overview of pest pressures and other environmental concerns including winter hardiness covered. Lastly, the harvesting and vinification of wine grapes will be examined with the inclusion of "hands-on" laboratory sessions

at a commercial vineyard and winery. Successful completion of the course should prepare students for upper-division courses in viticulture and oenology.
Fall semester – 3 lecs and 3 labs per week.

HORT2005: Design & Construction of Turf Facilities

Instructor: Prof. Daniels

Includes the interpretation and implementation of design and construction plans for various facilities such as golf courses and recreational fields. Topics include understanding the basic concepts involved in golf course construction, individual components of a golf course, design and construction of sport turf facilities, and development and maintenance of high-end facilities including those using synthetic turfgrass. Emphasis will be placed on the special considerations needed to "grow in" a new turf in each of these situations.

Fall semester – 2 lecs and 3 labs per week.

HORT3000 (ES370): Environmental Processes and Natural Landscape Functions

Coordinator: Prof. MacKenzie

The structure, functions, and dynamics of landscapes that are altered by human design are discussed. Key ecological processes and their disruption, landscape modification, and landscape planning and management will be examined. Students are expected to participate in field work, and to engage in self-directed study.

Fall semester – 3 lecs and 3 labs per week.

HORT3001 (ES380): Landscape Project Management

Instructor: Prof. MacKenzie

Prerequisite: A previous course in landscape design and construction

This is an advanced course in landscape design, estimating and construction. Principles and processes for cost estimating will be studied utilizing actual landscape projects, considering local building codes and regulations. Computers will be utilized in the process.

Fall semester – 3 lecs and 3 labs per week.

HORT3002 (PS315): Tree Fruit Crops (A, PDN)

Instructor: Prof. Ju

Prerequisites: AGRI1000, BIOL1000

Preparatory: BIOL2002

Origins, history, biosystematics, adaptation, distribution, and culture of tree fruits. Propagation, pruning, training, harvesting and storage, pest control, and breeding of new cultivars and marketing of these crops are included in the course.

Winter semester – 3 lecs and 2 labs per week.

Offered in alternate years; next offered in 2005/2006.

HORT3003 (PS320): Small Fruit Crops (A, PDN)

Instructor: Prof. Ju

Prerequisites: AGRI1000, BIOL1000

Preparatory: BIOL2002

Principles and practices of small fruit production, history, biosystematics, adaptation, distribution, pest control, breeding of new cultivars, and propagation, storage, and marketing are studied.

Fall semester – 3 lecs and 2 labs per week.

Offered in alternate years; next offered in 2006/2007.

HORT3004 (PS330): Greenhouse Crop Production and Floriculture (A, PDN)

Instructor: Prof. Mapplebeck

Prerequisites: AGRI1000, BIOL1000

Preparatory: BIOL2002

Construction and equipment of greenhouses and related structures. Physiological principles involved in the growing and correct timing of vegetables and flower crops are studied and related to commercially viable plant production. Plant nutrition, propagation, and greenhouse management are also considered.

Fall semester – 3 lecs and 2 labs per week.

Offered in alternate years; next offered in 2005/2006.

HORT3005 (PS335): Landscape Plant Production (A, PDN)

Instructor: Prof. Mapplebeck

Prerequisites: AGRI1000, BIOL1000

Preparatory: BIOL2002

Production of landscape plant materials is studied in detail. More specifically, this course covers plant propagation techniques, nursery culture and equipment, harvesting, storage, transportation, and garden-centre handling and sales of plants.

Winter semester – 3 lecs and 2 labs per week.

Offered in alternate years; next offered in 2006/2007.

HORT3006 (PS370): Landscape Horticulture Work Program II (PS)

Instructor: Prof. Goodwin

This is a Spring semester course. Students are required to work under contract in the landscape trade. The type of employment work experience gained must be different than that gained in previous work experience program courses. Available only to B.Tech (Env. Hort.) students.

Spring semester – 12 weeks.

HORT3007 (PS360): Environmental Horticulture Project I (PS)

Coordinator: Prof. Mapplebeck

This course requires the student to select an appropriate project plus a faculty advisor in consultation with the course coordinator. A project implementation plan will then be prepared. The projects may vary considerably in nature. Available only to B.Tech (Env. Hort.) students.

Fall or Winter semester – 1 lec per week.

HORT4000 (ES470): Urban Tree Management

Instructor: Prof. Goodwin

Prerequisite: HORT0207 or a previous course in arboriculture, or permission of the instructor

The focus of this course is on the management of the urban forest. Tree inventory systems, planning the urban forest, rhizosphere management, site reclamation, the valuation of urban trees, and trees and the law will be included. Lab exercises will include tree assessment techniques, tree inventory exercises, use of tree inventory software, new techniques for hazard tree assessment, new techniques for managing pests and diseases in urban trees, and site assessment and remediation. Tree pruning exercises will emphasize preservation of tree structure, quality of cuts, and work efficiency and safety.

Fall semester – 3 lecs and 3 labs per week.

HORT4001 (PS410): Horticulture (A, PS)

Instructor: Prof. Daniels

Prerequisites: PLSC4001 and three horticultural production courses

The objective is to review and integrate material from prerequisite courses on horticultural crop production, soil, climate, and basic sciences into crop management systems. Students successfully completing this course will qualify to be identified as horticulturalists.

Winter semester – 3 lecs per week.

HORT4002 (PS440): Management of Specialized Turf (PS)

Instructor: Prof. Daniels

Prerequisite: HORT0102

This course emphasizes the identification of problems in the areas of established turf grass, with suggested remedial actions. Off-campus sites are visited to provide a variety of situations for classroom study.

Fall semester – 2 lecs and 3 labs per week.

HORT4004 (PS460): Environmental Horticulture Project II (PS)

Coordinator: Prof. Daniels

This course requires the student to select an appropriate project plus a faculty advisor in consultation with the course coordinator. A project implementation plan will then be prepared. The projects may vary considerably in nature. The project could be a site analysis, a design, a maintenance calendar, a construction or maintenance estimate (cost analysis), or a nursery propagation or production study. Available only to B.Tech (Env. Hort.) students.

Fall or Winter semester – 1 lab per week.

International Development

INTD2000 (IN205): Food Systems in the Tropics (A)

Coordinators: Profs. Asiedu and Russell

This course examines tropical food systems with particular reference to Jamaica in the West Indies. Students will learn about farming systems, tropical crops and livestock, business structures of tropical agriculture, producer organizations, marketing, financing, trade, government involvement in food systems, and the consumer. Field trips to various agri-industry operations will be undertaken.

This intensive two-week course is offered in Jamaica at the College of Agriculture, Science and Education. Additional fees for travel, meals, and accommodations apply.
Spring semester (subject to enrolment).

INTD2001 (IN206): Agricultural Systems of Central Europe

Coordinators: Profs. Rifai and Gray

This course examines agricultural systems in central Europe with particular reference to Slovakia, the Czech Republic, and Hungary. Students will learn about the geography, history, farming systems, crop and animal husbandry, agricultural equipment and machinery, landscape development, and agricultural economics of central Europe. Field trips to various agri-industry operations will be undertaken.

This intensive two-week course is offered in Slovakia at the Slovak University of Agriculture in Nitra, in the Czech Republic at the University of Agriculture in Prague, and in Hungary at the Szent Istvan University in Budapest. Additional fees for travel, meals, and accommodations apply.

Spring semester – following exams in April.

INTD3000 (PS355): Tropical Agriculture (A, PS)

Instructor: Prof. Asiedu

This course will introduce the student to food production, storage, and handling systems in tropical and subtropical countries. The sustainability of these systems and issues that limit the use of the environment for long-term food production will be identified. Farming systems and

the role of national/international research centres are examined. The instruction will include resource people from several disciplines.
Fall semester – 3 lecs per week.

Math

MATH1000 (MP100): Calculus and Analytic Geometry I

Instructors: Profs. Madigan and Georgallas

Prerequisite: Grade 12 Pre-Calculus Mathematics or Introductory Studies MATH0050

A study of limit and the derivative, with maxima and minima, velocity and acceleration, and differentiation of the trigonometric, exponential, and logarithmic functions. Topics from analytic geometry are covered at appropriate stages throughout the course. Students are required to confirm their eligibility for admission to this course by means of a mathematics diagnostic test, to be taken the day following registration. Students not admitted must take MATH0050.

Fall and Winter semesters – 3 lecs and 1 tutorial per week.

MATH1001 (MP105): Calculus and Analytic Geometry II

Instructors: Profs. Madigan and Georgallas

Prerequisite: MATH1000

A continuation of MATH1000 dealing mainly with the integral calculus. Both definite and indefinite integrals are studied, with application to areas, volumes, hydrostatic pressure, and work. As in the case of MATH1000, topics from analytic geometry are covered at appropriate stages of the course.

Fall and Winter semesters – 3 lecs and 1 tutorial per week.

MATH2000 (MP230): Multivariable Calculus

Instructor: Prof. Madigan

Prerequisite: MATH1001

This course covers functions of several variables: vectors, space curves, partial derivatives, optimization, multiple integrals and their applications, vector fields, line integrals, flux integrals, divergence and curl, Stokes Theorem, and the Divergence Theorem.

Fall semester – 4 lecs and 2 labs per week.

MATH2001 (MP236): Differential Equations

Instructor: Prof. Madigan

Prerequisite: MATH1001

This course introduces the basic theory of differential equations, considers various techniques for their solution, and looks at various applications. Topics include First Order Linear and Non-Linear differential equations; differential equations of higher order; Laplace Transforms; Series solutions; systems of equations; and Fourier Series. Topics from Linear Algebra are included as required.

Winter semester – 4 lecs and 2 tutorials per week.

MATH3000 (MP335): Applied Linear Algebra

Instructor: Prof. Madigan

This course covers geometric vectors in three dimensions, dot product, lines and planes, complex numbers, systems of linear equations, matrix algebra, matrix inverse, determinants, Cramer's rule, introduction to vector spaces, linear independence and bases, rank, linear transformations, orthogonality and applications, Gram-Schmidt algorithm, eigenvalues and eigenvectors.

Winter semester – 3 lecs and 2 labs per week.

MATH4000 (MP460): Agricultural Modelling

Instructor: Prof. Georgallas

Prerequisites: MATH1001 and permission of the instructor

The aim of the course is to teach agricultural students when and how to attempt to express their ideas mathematically, and how to solve the resulting mathematical model and compare its predictions to experimental data. Topics include techniques of creating a model, techniques of solving models, testing and evaluating models, growth models, and a directed study project of an example of a model used in the agricultural sciences.

Winter semester – 3 lecs and 1 tutorial per week.

Management

MGMT0100 (EB10): Accounting

Instructor: TBA

An introduction to accounting topics useful to managers. Topics include recording transactions, forms of business organization, cash and accrual bases of accounting, financial statements, internal control, payrolls, bank reconciliation, and types of accounting systems, with an introduction to microcomputer applications.

Fall semester – 3 lecs and 2 labs per week.

MGMT0101 (EB11): Applied Accounting and Taxation

Instructor: TBA

Prerequisite: MGMT0100

The basic principles and procedures relevant to the accounting function of a business. Topics discussed include recording business transactions, year-end adjustments, and preparation of financial statements. Considerable time will be spent on Canadian income tax and a computerized accounting project.

Winter semester – 3 lecs and 2 labs per week.

MGMT0102 (EB40): Agricultural Marketing

Instructor: Prof. Russell

Preparatory: ECON0100

Current practices involved in marketing farm products produced in the Atlantic Provinces are studied. The conditions affecting these practices and the groups of people that can bring about changes are identified. Special attention is paid to consumer behaviour, supplier behaviour, market structures, price determination, marketing boards, and marketing commissions.

Fall semester – 2 lecs and 3 labs per week.

MGMT0103 (EB41): Business Law

Instructor: TBA

Introduces several legal topics relevant to the management of a business. Topics discussed are: legal structure in Canada, Law of Torts, contracts, sale of goods, consumer protection legislation, creditors, employment, forms of business organization, insurance, and real estate.

Winter semester – 3 lecs per week.

MGMT0200 (EB42): Applied Farm Management

Instructor: Prof. Tait

Prerequisite: MGMT2003

Designed to transfer classroom teaching to real farm situations. Students have an opportunity to apply the principles of farm management on production farms. Some of the requirements involve analyzing farm records, credit analysis, developing farm plans, and evaluating machinery, livestock, and crop decisions, based on actual farm cases.

Winter semester – 2 lecs and 3 labs per week.

MGMT0201 (EB65): Business Project

Coordinator: Prof. Tait

An opportunity to examine, in detail, specific agricultural topics of interest. Projects are organized and carried out by the students under the supervision of various staff members. Project will take more than one semester to complete.

Fall and Winter semester – 5 labs per week. (Students register in Fall semester and complete in Winter semester.)

MGMT0300 (EB72): Farm Project

Coordinator: Prof. Tait

The farm project relates the course program to the on-farm training. It stresses the application of information to a specific farm situation. For this project, the farm may be the home farm or any other farm. An intimate knowledge of the farm is necessary. The student, therefore, must have access to the farm and to detailed information about it. The prepared project consists of three sections: an analysis of the present farm operation, including a detailed inventory of land, buildings, machinery, and all other farm resources; an outline of the student's objectives and projected plans for the farm; and a practical step-by-step (year-by-year) program for the changes necessary to reach these goals. The farm project is introduced in the first technology year, before the beginning of the seven months of on-farm training. All the required data for the farm inventory are collected during the on-farm training period. The final work on the prepared project is done in the last college semester. Though most of the work is done outside of the scheduled class time, one afternoon per week is scheduled for special instruction and for presentations. Each student is required to present a minimum of one seminar on his or her farm plan to the project class and the instructor committee.

Winter semester – 5 labs per week.

MGMT0301 (EB95): Practicum – Farming Technology

Coordinator: Prof. Tait

The seven-month training takes place on a commercial production unit, where the student is under the direct supervision of the farmer. Emphasis is placed on having the student involved in all facets of the operation, with particular attention to financial management. Each student is expected to take part in selecting his/her training farm. Whenever possible the farm will be in the province chosen by the student. The final grade in the course is based on the student's performance in several topic areas (financial, production and specific skills) as determined by both the farmer and the coordinator.

Time – May to November, at the end of the first year of the Farming Technology program.

MGMT0302 (EB90): Economics and Business Technology Project

Coordinator: Prof. Tait

This project provides an opportunity for the students to study in detail an Economics and Business topic of special interest. This must be a new topic, but may build on other aspects of the study program. The student pursues studies under a project supervisor. The project plan developed with the advisor must include the purpose of the study, the procedures and materials used, a time schedule for the work involved, the method in which the information will be collected, the way in which comparisons and conclusions will be developed, and the format for the final report. Both a written and an oral report will be required. The mark is normally

reported in the student's final semester, but studies should commence early in the first semester.

Time – to be announced.

MGMT1000 (EB225): Small Business Entrepreneurship

Instructor: Prof. Russell

This course provides students with an overview of small business management theory and practice presented from an entrepreneurial perspective. Topic areas discussed include identifying and evaluating new business opportunities, financing the business, marketing management, human resources, and financial management. Upon successful completion of the course, students will understand the elements of business planning required for successful small businesses today.

Winter semester – 3 lecs per week.

MGMT2000 (H140): Human Resource Management

Instructor: TBA

An introduction to the human side of business organizations. The course focuses on the challenges of motivation, recruitment and selection, performance evaluation, compensation, and labour-management relations.

Fall and Winter semesters – 3 lecs per week.

MGMT2001 (EB230): Introduction to Business Law

Instructor: TBA

An introduction to general principles of law relating to the management of a business. Major areas studied are torts and contracts. Specialized topics include forms of business organizations, sale of goods, conditional sales, real property, mortgages, insurance, and wills.

Fall semester – 3 lecs per week.

MGMT2002 (EB335): Marketing

Instructor: TBA

Designed to introduce basic marketing principles and their application to marketing problems. Topics such as promotion, pricing, distribution, and marketing research are examined. The case method of instruction is used extensively. Class participation is a vital component of this course.

Fall semester – 3 lecs and 2 labs per week.

MGMT2003 (EB340): Farm Management (A)

Instructor: Prof. Tait

Principles and methods of organizing and analyzing farm businesses are examined. Practical problems associated with financial analysis, planning, capital budgeting, resource use, and credit acquisition are included. The role of the farm manager is identified throughout.

Fall semester – 2 lecs and 3 labs per week.

MGMT2004 (EB210): Financial Accounting I

Instructor: TBA

A study of the basic principles and procedures relevant to the accounting function of a business firm. Topics discussed include recording transactions, making adjusting entries, and preparing financial statements; accounting for a merchandising concern; computerized accounting software; accounting for cash, credit sales, and accounts receivable; inventories and cost of goods sold; and plant and equipment.

Fall semester – 3 lecs and 2 labs per week.

MGMT2005 (EB215): Financial Accounting II

Instructor: TBA

Prerequisite: MGMT2004

Continues the study of financial accounting with emphasis on special topics and reporting of accounting information. Includes a brief introduction to income tax.

Winter semester – 3 lecs and 2 labs per week.

MGMT3000 (EB315): Management Accounting

Instructor: Prof. Russell

Prerequisite: MGMT2004

This course introduces students to the use of accounting information in making effective management decisions. Topics include cost control and analysis, cost/volume/profit analysis, break-even analysis, differential analysis, and capital investment analysis.

Fall semester – 3 lecs and 2 labs per week.

MGMT3001 (EB430): International Marketing

Instructor: TBA

Prerequisite: MGMT2002

This course provides an introduction to international marketing and the international trading system. Students will be exposed to the unique aspects of international market research, selection, entry, pricing, and communications that differentiate them from their domestic equivalents. In addition the international trading system will be examined with an emphasis on institutions, such as the WTO, the IMF, and international commodity agreements, which directly impact the movement of goods and services. Cases are used extensively in the course and class participation is vital.

Winter semester – 3 lecs per week.

MGMT3002 (EB435): Consumer Behaviour

Instructor: TBA

Prerequisite: MGMT2002

The course introduces the student to the basics of consumer behaviour and then applies this knowledge to the food marketing system. Topics covered include external influences on consumer behaviour, motivation, perception, learning, and decision-making. Historic and recent trends in product marketing, pricing, and advertising also form part of the course. Cases are used extensively and class participation is vital.

Fall semester – 3 lecs per week.

MGMT4000 (EB410): Strategic Management

Instructor: TBA

Prerequisites: Students will normally be Agricultural Business majors who have successfully completed the first three years of the program.

This is a capstone course that will integrate all the business disciplines (marketing, finance, accounting, etc.) and prepare the student to formulate and implement strategy in an agribusiness setting. Students will be expected to gain a full understanding of the complexity and interrelationships of modern managerial decision-making and apply this knowledge to real managerial problems. Lectures, case studies, projects, and guest speakers will be utilized.

Fall semester – 3 lecs per week.

MGMT4001 (EB445): Advanced Entrepreneurship (A)

Instructor: Prof. Russell

Prerequisites: MGMT2002, MGMT2003 and at least third-year degree standing

This course will apply the concepts of entrepreneurship to creating and managing a small business. Students will investigate opportunities for new agribusinesses and develop business

plans which consider management structure, financing, production, marketing, and taxation. Lectures, case studies, guest speakers, and project assignments will be utilized. Winter semester – 3 lecs and 3 labs per week.

Microbiology

MICR2000 (B225): Microbiology

Instructor: Prof. Stratton

Preparatories: BIOL1000, BIOL1001

A general introduction to microbiology. Topics include history, morphology, structure, cultivation, reproduction, metabolism, genetics, classification, and control of microorganisms. The importance of microorganisms to soil productivity, foods, industry, veterinary science, public health, and sanitation is discussed. Students are required to have laboratory coats. Winter semester – 3 lecs and 3 labs per week.

MICR3000 (B355): Food Microbiology (A)

Instructor: TBA

Prerequisite: MICR2000

A study of microorganisms involved in the production and processing of food products. Topics will include the use of microorganisms for food production and processing, food spoilage and potential for food poisoning, as well as sanitation procedures, including government regulations and standards for the food industry. The use of conventional plating as well as rapid assay techniques will be discussed.

Fall semester – 3 lecs and 3 labs per week.

MICR4000 (B400): Soil Microbiology (A)

Instructor: Prof. Stratton

Prerequisites: MICR2000, SOIL2000

A study of the biology of the various classes of microorganisms in soil, including bacteria, blue-green algae, fungi, algae, protozoa, and viruses. This course includes details of biochemical transformation of carbon, nitrogen, sulfur, and phosphorous, as well as pesticides and wastes in the environment.

Fall semester – 3 lecs and 3 labs per week.

Offered in alternate years; next offered in 2006/2007.

Nutrition

NUTR3000 (AS305): Animal Nutrition (AS)

Instructor: Prof. Firth

Prerequisite: CHEM2000

A study of the principles of nutrition, including the digestion, absorption, and metabolism of nutrients by domestic animals. Functions of protein, lipids, carbohydrates, vitamins, and minerals are studied.

Fall semester – 3 lecs and 2 labs per week.

NUTR3001 (AS325): Applied Animal Nutrition (A, AS)

Instructors: Profs. Firth and Anderson

Prerequisite: NUTR3000

Feedstuff classification, characteristics, and regulations governing their use are described. Methodology for evaluating the relative merits of typical feedstuffs is discussed. The principles of nutrition are applied in the formulation of rations for monogastric, avian, and ruminant species.

Winter semester – 3 lecs and 2 labs per week.

NUTR3002 (AS365): Fish Nutrition (A, AS)

Instructor: Prof. Anderson

Nutrients required by finfish, shellfish, crustaceans, and molluscs are discussed in context with current and future sources of these nutrients. Digestive physiology and specific feeding problems of aquatic species are addressed. Diet formulations and feeding strategies for maintenance, growth, and reproductive performance of fish are covered.

Winter semester – 3 lecs and 2 labs per week.

NUTR4000 (AS475): Ruminant Digestive Physiology and Metabolism (AS)

Instructor: Prof. Fredeen

Prerequisites: BIOL2006, NUTR3000, CHEM3006

This course is designed to provide an intensive study of food intake and digestion, and nutrient absorption and metabolism, in the ruminant animal. The course details current knowledge and focuses on aspects of future research interest. Students are expected to contribute to discussions and present reviews to the class on various aspects of the subject.

Fall semester – 3 lecs and 2 labs per week.

Offered in alternate years; next offered in 2006/2007.

Philosophy

PHIL3000 (H350): Environmental and Agricultural Ethics (H)

Instructor: TBA

Prerequisite: at least third-year standing

This course offers a general introduction to environmental ethics with emphasis on agricultural issues. Students will be introduced to modern ethical theory and to techniques of philosophical reasoning, and will be provided with a general context for overall discussion by examining the origins of the modern world view (the rise of modern science, market economics, and liberalism). Students will be evaluated on class participation and a series of short weekly essays based upon directed readings and field experience. Essay-style midterm and final exams are required.

Winter semester – one 2-hour seminar per week.

Physics

PHYS1000 (MP150): Physics for the Life Sciences I

Instructor: Prof. Georgallas

Prerequisite: Grade 12 Physics (NS Physics 12, NB 121 or 122, PE 621, NL 3201 or 3202) or Introductory Studies PHYS0050

Prerequisite/Corequisite: MATH1000

In this course an understanding of Physics is acquired by exploring the physical principles which underlie complex biological structures. The nature of materials and the forces that act on them is introduced through a series of topic examples taken from evolution, mammalian physiology, plant structure, and others.

Students may take either PHYS1000 or PHYS1002 but not both for credit.

Fall and Winter semesters – 3 lecs per week, 11/2 labs/tutorials per week (alternating weekly).

PHYS1001 (MP250): Physics for the Life Sciences II

Instructor: Prof. Georgallas

Prerequisite: PHYS1000 or PHYS1002

In this course the physical principles underlying perception throughout the animal kingdom are introduced. The examples chosen emphasize adaptation and strategies (e.g., echolocation and noctuid moths) and represent a wide range of forms (e.g., eyes of the common scallop pecten, electric location by the fish *Gymnarchus niloticus*).

Winter semester – 3 lecs per week, 11/2 labs/tutorials per week (alternating weekly).

PHYS1002 (MP140): Physics I

Instructor: Prof. Pearson

Prerequisite: Grade 12 Physics (NS Physics 12, NB 121 or 122, PE 621, NL 3201 or 3202) or Introductory Studies PHYS0050

Prerequisite/Corequisite: MATH1000

Fundamental physical principles that are necessary for the understanding of the agricultural sciences form the core material of this course. Classical physics topics include vector analysis, dynamics, statics, fluid mechanics, acoustics and heat. Concepts derived from modern physics are added in order to complete the classical theories. Weekly student laboratory sessions allow for direct investigation of the theories studied in the course.

Students may take either PHYS1000 or PHYS1002 but not both for credit.

Fall and Winter semesters – 3 lecs, 11/2 labs, and 1 tutorial per week.

PHYS1003 (MP145): Physics II

Instructor: Prof. Pearson

Prerequisite: PHYS1002

A continuation of PHYS1002. The course mainly deals with electromagnetic theory, including such topics as electric charges, fields, potential, magnetic theory, induction, and Maxwell's Equations. Fundamental wave theory and optics are also studied, together with an introduction to nuclear physics. The laboratory provides an opportunity to investigate the theories in a hands-on environment.

Winter semester – 3 lecs and 3 labs per week.

Plant Science

PLSC0100 (PS35): Utilization of Plant Resources

Instructor: Prof. Goodyear

Using an integrated systems approach, students are introduced to the principles and practices involved in the sustainable production of crop plants. Practical exercises will give the students an opportunity to gain knowledge and skills involved in economic and environmental growing of agronomic and horticultural crops.

Fall semester – 3 lecs and 2 labs per week.

PLSC0200 (PS55): Plant Propagation

Instructor: Prof. Pruski

Physiological and anatomical basis of plant propagation and techniques of sexual and asexual propagation of agricultural and horticultural crops as well as landscape plant material and herbaceous perennials. Propagation structures, containers, media and sanitation, pedigreed seed production, and in-vitro techniques for micropropagation are also components of this course.

Fall semester – 3 lecs and 3 labs per week.

PLSC0201 (PS90): Technology Project

Coordinator: Prof. Asiedu

This project provides an opportunity for the student to study in detail a Plant Science topic of special interest. The topic may build on other aspects of the study program. The student pursues studies under a project supervisor. The project plan developed with the advisor must include the purpose of the study, the procedures and materials used, a time schedule for the work involved, the method in which the information will be collected, the way in which comparisons and conclusions will be developed, and the format for the final report. Both a written and an oral report will be required.

Students register in Fall semester and complete in Winter semester.

Fall and Winter semesters – 2 lecs per week.

PLSC0202 (PS99): Plant Science Techniques

Coordinator: Ms. Kilyanek

Prerequisite: completion of first year of Plant Science Technology program

This is a Spring semester course intended for students in the Plant Science Technology program following their first year of study. Students will be required to work under contract in an area of Plant Science with an approved employer for a period of at least 12 weeks (480 hours). Contract content will be relevant to the student's area of study and will be negotiated between the employer, the course coordinator, and the student. Assessment will be based on this contract and will be carried out jointly by the employer and the course coordinator.

Spring semester – 12 weeks.

PLSC0203 (PS76): Plant Products Physiology

Instructor: Prof. Asiedu

The principles of plant physiology as they apply to plant products in storage environments. This course deals with management practices associated with the harvesting and storage of crops and the effect of time period and conditions of storage on the quality of the plant products. Post-harvest handling systems and value-added products through minimal processing and packaging are examined. Storage structures are studied and representative types of commercial storages visited.

Winter semester – 3 lecs and 2 labs per week.

PLSC1000 (PS147): Farm Woodlot Management (A, PDN)

Instructor: T. Smith

This course has limited enrolment.

The importance of forestry to Canada and the Atlantic Provinces is explained. Management procedures and practices for the inventory of standing and felled trees, the establishment of new stands of trees, the tending of stands and plantations, and the harvesting of mature trees are illustrated and explained. Special attention is given to production of fuelwood, sawlogs, Christmas trees, maple sap, road construction, and wildlife.

Steel-toed boots and hard hats are required by law.

Fall semester – 3 lecs and 3 labs per week.

PLSC2000 (PS211): Specialty Crops (PDN)

Coordinator: Prof. Mapplebeck

This course will examine opportunities for specialty crop production, using an entrepreneurial approach. A core group of specialty crops will be examined. Production requirements, production and marketing potential, end use, and value adding will be studied. Students will have optional crop choices to reflect individual interest. A major project is required.

Winter semester – 3 lecs and 2 labs per week.

PLSC2001: Theory and Practice of Plant Propagation (PS)

Instructor: Prof. Pruski

Prerequisite: BIOL1000

Prerequisite/Corerequisite: BIOL2002

This course is intended to give students an advanced knowledge in the area of Plant Propagation. It is strongly recommended to those students wishing to undertake graduate work in plant sciences, biotechnology, environmental sciences and ecology. It is also recommended to managers of greenhouses and nurseries. Topics will include biology of plant propagation, propagation environment, breeding systems, seed and vegetative propagation, cell and tissue micropropagation, and propagation of selected plant species for commercial production.

Winter semester – 3 lecs and 3 labs per week.

PLSC4000 (PS400): Plant Breeding (A, PS)

Instructor: N. McLean

Prerequisites: GENE2000, STAT2000, one crop production subject

An introduction to the principles and practices of plant breeding, including the genetics of agriculturally important traits, germplasm conservation, breeding bio-technology, and the structure of the Canadian seed industry.

Winter semester – 3 lecs and 2 labs per week.

Offered in alternate years; next offered in 2005/2006.

PLSC4001 (PS415): Crop Adaptation (A, PS)

Instructor: Prof. Lada

Prerequisite: one crop production course

Preparatory: BIOL2002, BIOL3001

The course is designed to stimulate interest, critical thinking, and investigative processes for the understanding of crop adaptation to abiotic influences such as light, soil, and water and biotic factors such as other plants, mycorrhizae, and Rhizobia. Agricultural practices will be related to economic and environmental responsibilities.

Fall semester – 3 lecs per week.

Political Science

POLS1000: Introduction to Political Science (H)

Instructor: TBA

An introductory study of the ideologies of modern movements. Liberal democracy, conservatism, democratic socialism, fascism, and Marxist perspectives will be covered. Analysis of such central concepts as liberty, equality, power, authority, justice, law, constitutionalism, democracy, and authoritarianism will be presented and discussed. This course provides an overview of the various institutions and policies involved in governing. There will be a focus on rural social movements.

Fall semester – 3 lecs per week.

POLS1001: Structure and Function of Government (H)

Instructor: TBA

Students will study the legislative, executive, and judicial aspects of the Canadian state, and their interactions. They will look at political processes and policy development. This course will provide students with the basic knowledge of how governments operate at all levels. It will offer insight into how and why political decisions are made about the issues that affect all Canadians: taxation, education, employment, health care, and the debt. There will be a focus on issues of interest to rural Canada.

Winter semester – 3 lecs per week.

Research Methods/Project-Seminars

RESM4000 (AE449): Bio-Environmental Systems Management Project-Seminar I (A)

Coordinator: Prof. Sibley

Prerequisite: Bio-Environmental Systems Management (or Agricultural Mechanization) student in third year, or consent of the coordinator

Students will study an operation (information gathering) and review management of technology, human, finance and environmental resources. A group report and individual oral and poster presentations are required.

Winter semester – 1 scheduled seminar session per week.

RESM4001 (AE450): Bio-Environmental Systems Management Project-Seminar II (A)

Coordinator: Prof. Sibley

Prerequisite: RESM4000

Restricted to Bio-Environmental Systems Management (or Agricultural Mechanization) students in their final year or consent of the coordinator. This is a continuation of RESM4000 with a study and examination of alternatives to identified problems within the operation. Working with industry representatives, the course will identify solutions to current problems. Written and oral reports are presented to class and industry.

Fall semester – 4 labs per week.

RESM4002 (AS449): Animal Science Project-Seminar I (A)

Instructors: Dept. of Plant and Animal Sciences Faculty

Coordinator: Prof. Tennessen

Prerequisite: Animal Science major in third or fourth year of the program, or consent of the coordinator.

In consultation with a faculty advisor, Animal Science majors select a research topic. This topic is investigated and presented orally and in a written report. Other topics of current interest are also presented and discussed in the weekly seminar period.

Winter semester – 2 labs per week.

RESM4003 (AS450): Animal Science Project-Seminar II (A)

Instructors: Dept. of Plant and Animal Sciences Faculty

Coordinator: Prof. Tennessen

Prerequisite: RESM4002

The continuation and conclusion of the project selected in RESM4002.

Fall semester – 2 labs per week.

RESM4004 (EB425): Research Methods for Economics and Business (A)

Instructor: Prof. Grant

Prerequisites: at least third-year standing, including ECON1000

The lectures cover general methodological issues within business and social sciences research, as well as considering specific research techniques. Students undertaking fourth-year projects within the Department of Business and Social Sciences begin their projects, under faculty supervision, through this course's project development process. Other students may instead write one or more papers on research methodology.

Fall semester – 2 lecs and 2 labs per week.

RESM4005 (EB450): Project-Seminar for Economics and Business (A)

Instructors: Dept. of Business and Social Sciences Faculty

Coordinator: Prof. Grant

Prerequisite: RESM4004

Under the supervision of faculty, students complete the research projects begun in RESM4004. Each student is required to submit the first draft for evaluation by faculty. The student presents a final report and participates in peer evaluation of the presentations of the other students.

Winter semester – 2 seminars per week.

RESM4006 (ES449): Environmental Sciences Project-Seminar I (A)

Instructors: Dept. of Environmental Sciences Faculty

Coordinator: Prof. Stratton

Prerequisite: students registered for their final year in the Department of Environmental Sciences, or consent of the coordinator

A required course for all B.Sc.(Agr.) students registered in the Department of Environmental Sciences. Each student will choose a research project and faculty advisor in consultation with the course coordinator. Each student will present periodic oral and written reports on their subject of investigation. Other written and seminar topics may be assigned. Topics on communication skills and the presentation of scientific information in various formats will be discussed in the weekly seminar periods.

Fall semester – as arranged.

RESM4007 (ES450): Environmental Sciences Project-Seminar II (A)

Instructors: Dept. of Environmental Sciences Faculty

Coordinators: Profs. Le Blanc and Nams

Prerequisite: RESM4006

A continuation of RESM4006. Students will continue with their research projects. The course will culminate in the presentation of project results, in several formats. Other written and seminar topics may be assigned.

Winter semester – one seminar per week.

RESM4008 (PS449): Plant Science Project-Seminar I (A, PS)

Instructors: Dept. of Plant and Animal Sciences Faculty

Coordinator: Prof. Asiedu

Involves the selection of an appropriate project and the preparation of a research plan to investigate the chosen subject. Fundamentals of experimental design and data analysis are covered in lectures. Under the supervision of a faculty advisor, each student will select a topic, conduct a detailed literature review, and prepare an experimental plan for implementation in RESM4009. The research project and faculty advisor are to be chosen in consultation with the

course coordinator during Semester VI, and work initiated soon thereafter. This course is required by all students in Year 3 of the Plant Science option.
Winter semester – 2 lecs per week.

RESM4009 (PS450): Plant Science Project-Seminar II (A, PS)

Instructors: Dept. of Plant and Animal Sciences Faculty

Coordinator: Prof. Asiedu

Prerequisite: RESM4008

The continuation and conclusion of the subject selected in RESM4008. This consists of both a written and an oral presentation of the project.

Fall semester – 2 lecs per week.

RESM4010 (AS449): Aquaculture Project-Seminar I (A)

Instructors: Dept. of Plant and Animal Sciences Faculty

Coordinator: Prof. Tennesen

Prerequisite: Aquaculture major in third or fourth year of the program, or consent of the coordinator

In consultation with a faculty advisor, Aquaculture majors select a research topic. This topic is investigated and presented orally and in a written report. Other topics of current interest are also presented and discussed in the weekly seminar period.

Winter semester – 2 labs per week.

RESM4011 (AS450): Aquaculture Project-Seminar II (A)

Instructors: Dept. of Plant and Animal Sciences Faculty

Coordinator: Prof. Tennesen

Prerequisite: RESM4010

The continuation and conclusion of the project selected in RESM4010.

Fall semester – 2 labs per week.

Sociology

SOCI1000 (H160): Introductory Sociology (H)

Instructor: TBA

An introduction to the field of modern sociology. Themes addressed in the course are sociological theory and method, social process, social organization, social institutions, social differentiation, and social change. Discussion will include social issues, e.g. rural/urban conflict, an aging society, and family changes. Some emphasis will be given to rural social problems.

Fall semester – 3 lecs per week.

SOCI1001: Introductory Sociology II (H)

Instructor: TBA

The study of social issues uses sociological theory and research to examine social dynamics and social consequences associated with various current concerns. The topics covered will vary from year to year, but may well include problems such as gender and race relations, child and spousal abuse, substance abuse, poverty, work and alienation, and environmental issues. There will be a focus on issues of interest to rural Canada.

Winter semester – 3 lecs per week.

SOCI3000 (H360): Rural Sociology (H)

Instructor: TBA

Prerequisite: SOCI1000

This course provides a focus on rural sociological themes, particularly in the Canadian and Atlantic region context. Themes addressed include: the theory and nature of rural social change; rural communities and response to forces of change; problems and issues in rural society (e.g. crime, aging, health care); environmental issues and their links to society; and the social implications of economic and political change for rural Canada.

Fall semester – one 3-hour seminar per week.

Soils

SOIL0100 (CS12): Principles of Soil Science

Instructor: Prof. Miller

Designed to form a basis for the understanding of soil productivity. The course investigates the physical, chemical, and biological properties of soil. Laboratory exercises, using soils from the Atlantic region, are designed to illustrate the lecture material and introduce methods of soil analysis.

Fall semester – 3 lecs and 2 labs per week.

SOIL0200 (CS13): Soil Management

Instructor: Prof. Miller

Prerequisite: SOIL0100

A study of the chemical, physical, and biological properties of soil as they relate to crop production. Soil fertility and fertilizer use, tillage and water management, and biological husbandry are discussed. Labs take the form of problem-solving tutorials in soil management.

Winter semester – 3 lecs and 2 labs per week.

SOIL2000 (CS220): Introduction to Soil Science (A)

Instructor: Prof. Brewster

Prerequisite/Corequisite: CHEM1001 (or old CS100)

General principles of soil science relating to the origin, development, and classification of soils; the biological, physical, and chemical properties of soils and their relation to proper soil and crop management, land use, and soil conservation.

Fall semester – 3 lecs and 3 labs per week.

SOIL3000 (CS320): Soil Fertility (A)

Instructor: Prof. Miller

Prerequisite: SOIL2000

Preparatory: BIOL2002

Includes essential plant nutrients in the soil, influence of soil chemical and physical properties on nutrient absorption and plant growth, methods of evaluating soil fertility and composition, and use of organic and inorganic sources of nutrients.

Winter semester – 3 lecs and 3 labs per week.

Offered in alternate years; next offered in 2005/2006.

SOIL3001 (CS345): Soil Conservation in Agriculture (A)

Instructors: Profs. Miller and Brewster

Prerequisite: AGRI1000

A study of the processes of soil degradation and its prevention or amelioration. A major part of the course concerns the erosion of agricultural soils and its control. Other topics include soil

compaction and soil acidification, soil reclamation, use of soil in waste recycling, and the role of soil in water conservation. Lab periods may be used for field trips, tutorials, or seminars.
Fall semester – 3 lecs and 3 labs per week.

SOIL4000 (CS440): Environmental Soil Chemistry

Instructor: TBA

Prerequisite: SOIL2000

Chemical composition of soils (soil acidity, oxidation-reduction, ion exchange, adsorption-desorption reactions, clay mineralogy and organic matter transformations) in the context of environmental soil chemistry. Labs and seminar-discussions integrate basic soil chemical principles with problems in waste disposal, metal contamination, nutrient leaching, pesticide degradation, etc.

Winter semester – 3 lecs and 3 labs per week.

Offered in alternate years; next offered in 2005/2006.

Spanish

SPAN1000 (H135): Basic Spanish I (H)

Instructor: TBA

This course will be offered subject to minimum enrolment.

This course is designed to offer an initial competency in spoken and written Spanish.

Comprehension, reading, writing, and conversation are encouraged throughout the course. An introduction to basic grammar is offered. Anglophone, francophone, and international students are encouraged to take this course. Students whose first language is Spanish will not be eligible.

Fall semester – 3 lecs per week.

SPAN1001 (H136): Basic Spanish II (H)

Instructor: TBA

Prerequisite: SPAN1000

This course will be offered subject to minimum enrolment.

This course is designed for anglophone, francophone and international students. It is a continuation of SPAN1000 with emphasis on comprehension, conversation, reading, and writing.

Winter semester – 3 lecs per week.

Special Topics

SPEC2000 (EB221): Topics in Economics and Business Management (A)

Instructors: Dept. of Business and Social Sciences Faculty

Prerequisites: 10 degree or diploma credits

An opportunity for students throughout the College to study introductory topics defined by an individual student, a group of students, or faculty. The course is conducted by classes, tutorials, assigned readings, assignments and/or other appropriate activities. Topics must be supervised by a faculty member and approved by the department head.

Fall, Winter or Summer semester – as arranged.

SPEC2001: Topics in International Development (A)

Coordinator: Dean of Internationalization

Prerequisite: Second-year standing

An opportunity for students to study introductory topics in international development, with a focus on agriculture and rural development. Topics may be defined by the individual student, a group of students, or faculty. The course is conducted by classes, tutorials, assignments, readings, and/or other appropriate activities. Students are encouraged to use international travel or study opportunities as a focus for the course, but this is not required. Topics must be supervised by a faculty member in the proposed area of interest, and approved by the Dean of Internationalization. Students must apply to the Dean of Internationalization at least six weeks before the semester start date.

Fall, Winter or Summer semester – as arranged.

SPEC4000 (AS421): Special Topics in Animal Science or Aquaculture (AS)

Instructors: Dept. of Plant and Animal Sciences Faculty and Staff

Coordinator: Prof. Tennessen

Prerequisites: two years of full-time study at a postsecondary institution (normally 20 degree credits), and permission of the instructor

This is an opportunity to study a special topic in the area of animal science or aquaculture as defined by an individual student, group of students or faculty. The course is conducted by tutorials, assigned readings, assignments, field trips and/or other appropriate activities. The special topics would normally be supervised by a faculty or staff member associated with the Animal Science program or the Aquaculture program and approved by the department head.

Fall or Winter semester – as arranged.

SPEC4001 (B421): Special Topics in Agribiology I (A)

Instructors: Dept. of Environmental Sciences Faculty

Prerequisite: 20 degree credits

An opportunity to study a special topic defined by an individual student, a group of students, or faculty. The course is conducted by tutorials, assigned readings, assignments, and/or other appropriate activities. Special topics must be supervised by a faculty member and approved by the department head.

Fall or Winter semester – as arranged.

SPEC4002 (B422): Special Topics in Agribiology II (A)

Instructors: Dept. of Environmental Sciences Faculty

Prerequisites: 20 degree credits

A second special topics course provides additional opportunity for students to individualize their programs with in-depth study of an approved topic. Although the second topic selected may be in a similar area of interest to that studied in SPEC4001, it must be sufficiently distinct to warrant additional study. Special topics must be supervised by a faculty member and approved by the department head.

Fall or Winter semester – as arranged.

SPEC4003 (CS415): Special Topics in Chemistry and Soil Science I (A)

Instructors: Dept. of Environmental Sciences Faculty

Coordinator: Prof. Hoyle

An optional course for Agricultural Chemistry and Soil Science students who want to study a special topic. Course material will be arranged with Chemistry and Soil Science faculty. The course will be conducted by special tutorials, assigned readings and independent lab work where appropriate. This course will normally be taken by students in their final year.

Fall or Winter semester – as arranged.

SPEC4004 (CS425): Special Topics in Chemistry and Soil Science II (A)

Coordinator: Prof. Hoyle

Prerequisite/Corequisite: SPEC4003

An optional course for Agricultural Chemistry and Soil Science students who want to do a second in-depth study of a special topic in their final year. The topic selected by a student may be in an area of interest similar to that studied in SPEC4003 but must pertain to a distinctly different aspect of that field of Chemistry or Soil Science. Course material will be arranged with Chemistry and Soil Science faculty. This course will involve special tutorials, assigned readings, and independent lab work where appropriate.

Fall or Winter semester – as arranged.

SPEC4005 (EB421): Special Topics in Agricultural Economics and Business I (A)

Instructors: Dept. of Business and Social Sciences Faculty

Prerequisites: 30 degree courses

An opportunity to study a special topic, defined by an individual student, a group of students, or faculty. The course is conducted by tutorials, assigned readings, assignments, and/or other appropriate activities. Special topics must be supervised by a faculty member and approved by the department head.

Summer, Fall, or Winter semester – as arranged.

SPEC4006 (EB422): Special Topics in Agricultural Economics and Business II (A)

Instructors: Dept. of Business and Social Sciences Faculty

Prerequisites: 30 degree courses

A second special topics course provides additional opportunity for students to individualize their program with in-depth study of an approved topic. Although the second topic selected may be in a similar area of interest to that studied in SPEC4005, it must be sufficiently distinct to warrant additional study. Special topics must be supervised by a faculty member and approved by the department head.

Summer, Fall or Winter semester – as arranged.

SPEC4007 (ES401): Special Topics in Environmental Studies I (A)

Instructors: NSAC Faculty

Coordinator: Prof. Stratton

Prerequisites: 20 degree, technology or technical credits, including ENVS2000 and ENVS2001, and permission of the coordinator

This is an opportunity to study a special topic in the area of agricultural environmental studies or environmental horticulture as defined by an individual student, group of students, or faculty. The course is conducted by tutorials, assigned readings, assignments, and/or other appropriate activities. Special topics would normally be supervised by a faculty member associated with either the Environmental Sciences or Environmental Horticulture program and must be approved by the coordinator.

Fall or Winter semester – as arranged.

SPEC4008 (ES402): Special Topics in Environmental Studies II (A)

Instructors: NSAC Faculty

Coordinator: Prof. Stratton

Prerequisites: 20 degree, technology, or technical credits, including ENVS2000 and ENVS2001, and permission of the coordinator

This is an additional opportunity to study a special topic in the area of agricultural environmental or environmental horticulture studies as defined by an individual student, group of students, or faculty. The course is conducted by tutorials, assigned readings, assignments, and/or appropriate activities. Although the second topic selected may be in a similar area of interest to that studied in SPEC4007, it must be sufficiently distinct to warrant additional study. Special topics would normally be supervised by a faculty member associated with the Environmental Sciences or Environmental Horticulture program and must be approved by the Coordinator.

Fall or Winter semester – as arranged.

SPEC4009 (H403): Special Topics in Rural Studies (H)

Instructors: Dept. of Business and Social Sciences Faculty

Prerequisite: at least third-year standing

This is an opportunity to study a special topic, defined by an individual student, a group of students, or faculty. The course will consist of tutorials, assigned readings, writing assignments, and/or other appropriate activities. Special topics must be supervised by a Faculty member and approved by the Business and Social Sciences department head.

Fall, Winter, or Summer semester, as arranged – 3 lecs per week.

SPEC4010 (PS421): Special Topics in Plant Science I (A, PS)

Instructors: Dept. of Plant and Animal Sciences Faculty

Prerequisites: 20 degree credits or enrolment in the B.Tech program

An opportunity to study a special topic, defined by an individual student, a group of students, or faculty. The course is conducted by tutorials, assigned readings, assignments, and/or other appropriate activities. Special topics must be supervised by a faculty member and approved by the department head.

Fall, Winter or Summer semester – as arranged.

SPEC4011 (PS422): Special Topics in Plant Science II (A, PS)

Instructors: Dept. of Plant and Animal Sciences Faculty

Prerequisites: 20 degree credits or enrolment in the B.Tech program

A second special topics course provides additional opportunity for students to individualize the program with in-depth study of an approved topic. Although the second topic selected may be in a similar area of interest to that studied in SPEC4010, it must be sufficiently distinct to warrant additional study. Special topics must be supervised by a faculty member and approved by the department head.

Fall, Winter or Summer semester – as arranged.

SPEC4012 (AE415): Directed Studies in Agricultural Engineering (A)

Instructors: Engineering Department Faculty

Independent studies are developed through literature review or laboratory or field research on topics pertinent to agricultural engineering.

Fall or Winter semester – as arranged.

SPEC4013: Directed Studies in International Development (A)

Coordinator: Dean of Internationalization

Prerequisites: 30 degree credits or final-year standing

Independent study of topics in international development at an advanced level, with a focus on agriculture and rural development. Topics are developed through literature review, assigned readings, and discussion, and may include independent research. Students are expected to

present the final project at a public seminar. Students are encouraged to use international travel or study opportunities as a focus, but this is not required. Topics must be supervised by a faculty member in the proposed area of interest, and approved by the Dean of Internationalization. Students must apply to the Dean of Internationalization at least six weeks before the semester start date. This course would normally be taken by undergraduate students in their final year. Fall, Winter or Summer – as arranged.

Statistics

STAT2000 (MP210): Introduction to Statistics

Instructor: Prof. Astatkie

Graphical presentation of data; descriptive statistics; normal, binomial, t and F distributions; sampling distributions and the central limit theorem; estimation and hypothesis testing of a single mean and the difference between two means; and introduction to correlation, regression and analysis of variance for simple experimental designs.

Fall and Winter semesters – 3 lecs, 1 tutorial, and 1 computer lab per week.

STAT2001 (MP212): Probability and Statistics for Engineering

Instructor: Prof. Pearson

This calculus-based first course in probability and statistics is designed to interact with the major disciplines within engineering. Topics include descriptive statistics, mathematics of probability, random variables and probability distributions, estimation, hypothesis testing, linear regression and correlation, and introduction to analysis of variance. Problem-solving skills in material related to engineering will be emphasized.

Winter semester – 3 lecs, 1 tutorial, and 1 lab per week.

STAT3000 (MP211): Introduction to Planned Studies: Surveys and Experiments

Instructor: Prof. Astatkie

Prerequisite: STAT2000

This course is a continuation of STAT2000. Topics covered include sampling techniques, simple and multiple linear regression, analysis of variance for completely randomized and randomized block designs, nonparametric tests, and introduction to categorical data analysis.

Winter semester – 3 lecs, 1 tutorial, and 1 computer lab per week.

STAT4000 (MP420): Intermediate Statistical Methods

Instructor: Prof. Astatkie

Prerequisite: STAT3000

Analysis of single-factor experiments, randomized blocks, latin squares, and factorial and two-level fractional factorial designs.

Fall semester – 3 lecs and 1 computer lab per week.

Description of Courses – Introductory Studies Courses

These non-credit courses are offered for students who do not meet entrance requirements or who require upgrading to enter certain courses.

CHEM0050 (CS89): Preparatory Chemistry

Instructor: B. Jones

Prerequisite: approval of the Registrar

This course is designed for students who satisfy all other requirements for admission but lack the Grade 12 Chemistry course. The course will cover the basic materials necessary for entrance into CHEM1000, including review of the periodic table, nomenclature, chemical reactions, aqueous solutions, chemical bonding and other topics as determined by a review of the class.

This is a non-credit course. CHEM0050 is not intended to duplicate or replace Grade 12 Chemistry.

Fall and Winter semesters – 3 lecs and 1 tutorial per week.

MATH0050 (MP85): Functions

Instructor: B. Jones

Prerequisite: if required as a result of performance on a mathematics diagnostic test, or approval of the Registrar

This is a one-semester course designed for those who do not have the requisite skills for the first-year mathematics courses but have shown sufficient basic mathematical ability to warrant a one-semester course to make up for the deficiencies. This course will emphasize the study of the basic functions used in the sciences. Topics to be covered include linear, exponential, logarithmic, and trigonometric functions. Emphasis is placed on using a graphing calculator. This is a non-credit course. MATH0050 is not intended to duplicate or replace Grade 12 Pre-Calculus Mathematics.

Fall and Winter semesters – 3 lecs and 1 tutorial per week.

PHYS0050 (MP90): Introductory Physics

Instructor: B. Jones

Prerequisite: approval of the Registrar.

An introductory course for entering students who do not have the equivalent of NS Grade 12 Physics. Course topics include one-dimensional kinematics, vector theory, Newton's Laws, equilibrium, kinetic energy and work, and other topics as determined by a review of the class.

This is a non-credit course. PHYS0050 is not intended to duplicate or replace Grade 12 physics. Fall and Winter semesters – 3 lecs and 1 tutorial per week.

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Graduate Program

Master Of Science in Agriculture

The Master of Science program with a specialization in agriculture is a joint program offered by the Nova Scotia Agricultural College (NSAC) and Dalhousie University. Dalhousie University

grants the Master of Science degree in association with NSAC. Graduate students may take graduate courses offered at NSAC and at Dalhousie University. This provides graduate students in the M.Sc. program in agriculture with a wide variety of courses from which to select. Graduate courses offered at NSAC are listed herein. Graduate courses offered at Dalhousie University are listed in the Dalhousie University Graduate Studies Calendar 2005/2006, available on the Dalhousie web site at www.dalgrad.dal.ca.

Students accepted for enrolment in the M.Sc. program are registered at NSAC and Dalhousie, and are given a student identification number for each institution in accordance with the systems in place at each institution. Official transcripts for all students are produced by Dalhousie University.

For all academic matters relating to the M.Sc. program, including admission requirements, degree requirements, examinations, evaluations and theses, students are deemed to be students of both NSAC and Dalhousie University. Students are subject to the academic regulations and rules of FGS as outlined in the Dalhousie University Graduate Studies Calendar 2005/2006. All academic policies are outlined in the Graduate Program Procedures Manual available from the Research & Graduate Studies Office. The 2005/2006 edition of this manual will be available in August.

For all non-academic matters, including the payment of tuition and other fees, scholarships, bursaries, research and conference funding, athletics, and non-academic discipline, students are deemed to be students of NSAC. Graduate students are referred to the NSAC Community Standards 2005/2006 document (www.nzac.ns.ca/stuserv/handbooks.htm) for further information on the rules and regulations governing the College community. This document describes the regulations/standards that constitute reasonable behaviour and outlines the process by which breaches of these standards are adjudicated. This document also contains the alcohol and drug policy, information on appeal processes, and the NSAC Student Code of Conduct. The College's Policy for Responsible Computing also applies to graduate students and can be found in the document Policy Governing Access to and Use of NSAC Academic Computing (www.nzac.ns.ca/acs/policies.htm).

All students must agree to obey all the regulations of NSAC and all academic regulations of FGS. Additionally, students are advised that this Calendar is not an all-inclusive set of rules and regulations but represents only a portion of the rules and regulations that will govern the student's relationship with NSAC and Dalhousie University. Other rules and regulations are contained in additional publications (e.g. Graduate Program Procedures Manual) that are available to the student from Dalhousie University Registry and Faculty of Graduate Studies as well as the NSAC Registry and Research & Graduate Studies Office. Students are also advised that the regulations herein are subject to change.

Animal Science

(livestock, fur animals, poultry, shellfish and finfish)

- Animal Management Behaviour
- Breeding
- Molecular Genetics
- Nutrition
- Physiology

Environmental Science

- Agricultural Systems

Management

- Ecology
- Entomology
- Pest Management

- Resource Management
- Wastewater Management
- Weed Science

Plant Science

(fruits, vegetables, grains, forages and specialty crops)

- Cropping Systems Management
- Plant Breeding
- Molecular Genetics
- Nutrition
- Pathology
- Physiology

Soil Science and Agricultural Chemistry

- Food Biochemistry
- Food Product Development
- Food Safety and Quality
- Soil Chemistry
- Soil Conservation and Management
- Soil Fertility

NSAC has unique strengths in the areas of Organic Agriculture; Air, Water and Soil Quality Management; Fur Animal Research; Aquaculture Production; Pasture Management; and Agricultural Waste Management. There are also opportunities for graduate studies in Engineering. Contact us for details.

Admission Requirements

Candidates must hold a Bachelor's degree with a minimum 'B' average or GPA of 3.0 from a university of recognized standing. For entry into the Master's program, candidates must hold a Bachelor's degree with Honours or the equivalent of honours standing as granted by Dalhousie University in the area in which graduate work is to be done or an area that is relevant to the graduate work. A four-year Bachelor's degree may be considered as equivalent of honours if there is significant evidence of independent research capacity (such as a research project as part of a course) or if the degree is officially approved as an honours equivalent. In those cases where a candidate has a three-year degree and an honours program was not available to them, first-class candidates will be considered for admission into the two-year program or Qualifying Year (programs are described below).

English is the standard language of study at NSAC and Dalhousie University. Thus, candidates whose native language is not English must demonstrate their capacity to pursue a graduate-level program in English before admission. The standard test is TOEFL (Test of English as a Foreign Language). The minimum acceptable score for the written TOEFL is 580 and for the computer-based TOEFL is 237. It is also recommended that potential students taking the non-computer TOEFL test should also take the Test of Written English (TWE) component. Official TOEFL reports are to be submitted to NSAC (institution code 0844). The following other tests will also be accepted with the following minimum scores: MELAB, 90; IELTS, 7; CanTest, average of 4.5 with no band score lower than 4.0; CAEL, 60 overall, with no band score lower than 50. The

TOEFL requirement is waived if the applicant has completed a degree at an institution where the language of instruction is English.

There are some exceptions to this policy. Please contact the Research & Graduate

Studies Office, NSAC, at (902) 893-6502 (902) 893-6502 FREE (e-mail: mlaw@nsac.ns.ca), if you have any questions regarding the English Language Requirement.

Further information on these tests may be obtained from:

Test of English as a Foreign Language (TOEFL)

Education Testing Service

P.O. Box 6151

Princeton, NJ

USA 08541

toefl@ets.org

www.toefl.org

Michigan English Language Assessment Battery (MELAB)

English Language Institute

TCF Building

University of Michigan

401 E. Liberty, Ste 350

Ann Arbor, Michigan

USA 48104-2298

melabelium@umich.edu

www.lsa.umich.edu/eli/melab.htm

International English Language Testing System (IELTS)

University of Cambridge Local Examinations Syndicate

1 Hills Road

Cambridge, UK

CB12EU

ielts@ucles.org.uk

www.ielts.org

Canadian Test of English for Scholars and Trainees (CanTest)

CanTEST Project Office

Second Language Institute

University of Ottawa

600 King Edward Avenue

Ottawa, ON

K1N 6N5

cantest@uottawa.ca

www.arts.uottawa.ca/ils/eng/cantest_register.html

Canadian Academic English Language Assessment (CAEL)

CAEL Assessment Testing Office

School of Linguistics and Applied Language Studies

Carleton University

126 Paterson Hall, 1125 Colonel By Drive

Ottawa, ON

K1S 5B6

cael@carleton.ca
www.carleton.ca/slals/cael.htm

All applications will be reviewed at NSAC based on the academic qualifications and record of the applicant. Paper copies of applications may be received from the Research & Graduate Studies Office (RGS), Nova Scotia Agricultural College, P.O. Box 550, Truro, NS, B2N 5E3 or from the RGS web site (www.nzac.ca/rgs/graduate/admiss.asp). Completed applications are sent from the Graduate Coordinator to the head of the department to which the student is applying. The Department Head receives completed applications, arranges for a departmental recommendation on admission for each applicant, and assists the Graduate Coordinator with finding a supervisor and funding support for acceptable M.Sc. candidates. In the event that a supervisor can be found but funding support is not available, the Department may recommend that the student be admitted on a self-funded basis. A recommendation on admission, signed by the Department Head, will be forwarded to the Graduate Coordinator within two weeks of receiving the completed application. Recommendations regarding admission will then be forwarded from NSAC to the Dean of Graduate Studies, Dalhousie University. At this stage, NSAC will contact applicants to inform them that a positive recommendation has been made to the Faculty of Graduate Studies, Dalhousie University (FGS). This does not constitute official acceptance into the graduate program. Final decisions on all admissions are made by FGS, and there are no appeals on admission decisions. Official acceptance is achieved when the recommendation has been approved by FGS and a formal letter of acceptance is issued by the Dalhousie Registrar's Office. This letter is the only official notification that is sent out. All other forms of communication, including letters from the supervisor or department, do not constitute official acceptance or rejection. Please note that entry into the graduate program is very competitive and applicants who meet or exceed the minimum requirements are not guaranteed admission. Normally, successful applicants have academic records and qualifications that are well above the minimum required.

Note that supporting documents included in applications (e.g., transcripts, letters of reference, etc.) will be verified for authenticity. Applicants submitting fraudulent documents will have their names published on the listserv of the Association of Registrars of Universities and Colleges in Canada and may have their acceptance rescinded.

Dalhousie University reserves the right to rescind any acceptance of an applicant in the program or to rescind an offer of admission of an applicant into the program. Such rescission will be in writing in accordance with Dalhousie University regulations (see Dalhousie University Graduate Studies Calendar 2005-2006).

Newly-accepted applicants who, for reasons beyond their control, are unable to take up their position on the date for which they were accepted, may request a deferral of their start date to a later term. Students may request a deferral of one, two, or three terms, and no student may receive more than one deferral. Students wishing to request a deferral should contact the NSAC Research & Graduate Studies Office as soon as possible. All deferrals are subject to the agreement of the supervisor who has agreed to supervise the student's program of study, the head of the department to which the student has applied, and the final approval of FGS. Students are advised that funding assistance provided through a research assistantship (e.g., supervisor's research grant or contract) may be rescinded if the student is unable to register on the date for which they were originally accepted into the program. If a student requests a deferral after he or she has registered, it is the student's responsibility to cancel his or her registration.

Application forms and details may be obtained from:

Research & Graduate Studies Office
Cumming Hall, Nova Scotia Agricultural College
PO Box 550, Truro, Nova Scotia B2N 5E3

Phone (902) 893-6502 (902) 893-6502 FREE , Fax (902) 893-3430
www.nsac.ns.ca

Students who have taken graduate courses before applying for graduate studies, and who have not used these credits for another degree, should apply for appropriate graduate credit at the time of admission. FGS does not guarantee that advanced standing will be granted for courses taken prior to admission to the graduate program. Under no circumstances will advanced standing be approved retroactively.

Academic Deadlines

A complete list of academic deadlines for those students enrolled in the M.Sc. program can be found in the Graduate Program Procedures Manual 2005/2006 (available on the NSAC website at www.nsac.ns.ca/rgs/graduate/policy.asp). The Graduate Coordinator distributes this manual to all registrants in the M.Sc. program annually at registration.

Starting Dates

Students may choose to begin their Master of Science in Agriculture program in the Fall (September 1), Winter (January 1), or Spring (May 1) session.

Application Deadlines

The final date for the receipt of applications for studies commencing:

September 1 is June 1

(non-Canadian students April 1)

January 1 is November 15

(non-Canadian students August 31)

May 1 is February 28

(non-Canadian students December 31)

*If visa processing is lengthy (such as in the People's Republic of China), applicants should apply at least two months before the deadline, e.g., by January 31 for September admission.

Applicants who require a student visa and are not funded by NSAC or an officially recognized funding agency must provide proof of financial ability with their application. Immigration Canada is increasingly rigorous about requiring proof of sufficient financial support to complete the program of study.

Applicants who wish to apply for funding support (e.g., research assistantship) are strongly encouraged to apply for admission before the stated deadline and to indicate the need for financial support in their application. All applicants are automatically considered for financial support. Candidates should also apply for external awards whenever possible. NSAC reserves the right to rescind financial support (e.g., research assistantships, entrance scholarships) after the letter of initial offer, should the applicant be deemed not to meet admission standards or the academic standards required for scholarship criteria.

Students with diagnosed learning disabilities who meet the current admission requirements may follow the current admission procedures.

Students with diagnosed learning disabilities who do not meet the current admission requirements or who otherwise wish to have their learning disability considered may apply for special consideration as may all other students who have extenuating circumstances. The following additional documentation must be submitted by students who wish to apply for special consideration:

- letter(s) of recommendation from the individual(s) most familiar with the applicant's academic performance and/or potential for success in the program;
- a written, oral or electronic statement from the student—in this brief personal statement, students should describe their learning disability, how this affected their grades, and the type of assistance they would require while at NSAC; and
- a current (within three years) psychological assessment based on standard diagnostic instruments administered by a registered psychologist documenting the presence of learning disabilities. If a current report is not possible, NSAC/Dalhousie University may accept an earlier report along with a current opinion (i.e., within the past year) expressed in a letter by a registered psychologist (or individual supervised by a registered psychologist) that the student has a learning disability. This letter should specify the nature, extent and rationale for program modifications or accommodations that were deemed appropriate in the student's last two years of schooling.

Programs Of Full-Time and Part-Time Study

One-Year M.Sc. Program

Ten graduate credits are required. The thesis will count for a maximum of six credits. The remaining credits (pass grade of 'B-' or 70% in each course) must include AGRI5700 (Communication Skills and Graduate Seminar). The number of credits awarded for the thesis is intended to make the total number of credits equal to the number required for the M. Sc. degree (ten), and is not related to the thesis quality; it is expected that a thesis awarded four credits is of the same quality as a thesis awarded six credits. The one-year program involves a program fee requirement of one year, during which a full-time student is expected to be on campus unless otherwise given permission to take courses or undertake research somewhere else. The one-year program fee is followed by continuing fees as required.

Two-Year M.Sc. Program

In addition to the requirements for a one-year M.Sc. program, students must complete at least five credits related to their thesis work with a grade of 'B-' (70%) or better in each course. These additional credits may be at the undergraduate or graduate level. The two-year program involves two years of program fees followed by continuing fees as required.

General Information

Graduate Courses

Graduate courses at NSAC are numbered in the 5000 series. No course can be assigned a graduate number without the recommendation of the Curriculum Committee and the approval of Faculty Council (NSAC) and the Curriculum Committee, Faculty of Graduate Studies. The last dates for adding and deleting classes are published in the schedule of Academic Deadlines, as printed in the Dalhousie University Graduate Studies Calendar 2005/2006. For withdrawals within this period, the class and the withdrawal are not recorded on the academic record. After these dates, the student is responsible for the content of the class and receives a grade for it. Students may not transfer from full to part-time status by withdrawing from classes after the deadlines listed in the schedule of Academic Deadlines.

Advanced Placement

Advanced placement can be given for courses already counted toward a previous degree. Advanced placement can reduce the overall number of course requirements when the student's previous degree and standing are exceptional. Advanced placement must be approved by the supervisor, the Graduate Coordinator and FGS, and must be clearly annotated on the student's Graduate Program Form. Students should be aware that courses approved for advanced placement will not appear on their official transcript of the NSAC/Dalhousie M.Sc. program.

Transfer Credit
A transfer credit allows for courses completed outside of the student's program, normally at another institution, to be used as part of the student's degree requirements. Such courses cannot have been used for credit for another degree, and cannot exceed 33% of the student's overall requirements. This total of 33% would also include any courses taken on Letter of Permission. Transfer credits should be applied for within the first term following admission and must be approved by the student's supervisor, the Graduate Coordinator, and FGS. An original transcript and course equivalency is required. Approved transfer credits will appear on the student's official transcript of the NSAC/Dalhousie M.Sc. program.

Letters of Permission

The maximum number of courses taken outside of NSAC/Dalhousie University Master of Science program, combining classes taken by Letters of Permission and by Transfer Credits, shall normally be confined to 33% of the class requirements. Courses approved by Dalhousie University (after examination of course descriptions) can be taken at other universities on Letter of Permission as part of the graduate degree program provided the course is not available at NSAC or Dalhousie University. Graduate students enrolled in the M.Sc. program in agriculture do not need a Letter of Permission to take courses at Dalhousie University.

Approval of the Letter of Permission is granted by the Dean of Graduate Studies, Dalhousie University. Graduate students must be registered and have paid appropriate fees before Letters of Permission will be approved. Full-time and part-time students are eligible to apply to take a course on a Letter of Permission. Students may not take classes outside of the NSAC/Dalhousie M.Sc. Program for graduate credit unless prior approval has been received from FGS. Letters of Permission are not approved retroactively.

Students must achieve a 'B-' (70%) grade or better in order to achieve a pass standing at NSAC/Dalhousie University. Grades below 'B-' received for courses taken on a Letter of Permission at another institution will be recorded as a failing grade on the student's record. The normal regulations governing grading policy apply to classes taken at other institutions (e.g., a 'C+' on a graduate class taken elsewhere will be deemed an 'F' in the student's program and will render him/her liable to academic withdrawal). Students who fail a class may not replace that class on a Letter of Permission, except with special permission of FGS.

NSAC will normally pay the tuition, up to a maximum of \$, for students who pay a program fee to take classes on a Letter of Permission if the course is a required course for the student's M.Sc. program and the course is not available at NSAC or Dalhousie University. (Thus, this policy would not apply to students who pay 'course fees'.) NSAC will reimburse the student up to a maximum of \$ toward the cost of a course taken on a Letter of Permission provided that the student passes the course (minimum grade of 'B-' or 70%). Students are only reimbursed after they have taken and passed the course. To be reimbursed, the student must provide proof of payment for the course and official transcripts showing that the course was passed.

Ancillary Courses

A student may be directed by his/her supervisor or supervisory committee to take undergraduate courses which are ancillary in nature to the student's specific area of study. Undergraduate courses recommended by a supervisor or the supervisory committee as advisable additional background to the degree program, but not specifically required for that

program, are termed ancillary courses and are usually taken in a department other than the one in which the student is registered. These are taken by the student for credit in order to make up deficiencies in background or to acquire important skills of an ancillary nature. The pass grade in ancillary courses taken at NSAC (i.e., NSAC undergraduate courses) is 60%. Ancillary classes must be listed on the Program Form but do not count toward the required number of credits for the M.Sc. degree. Students who take ancillary courses at another institution are responsible for the tuition fees at the other institution. Undergraduate courses taken at NSAC will not appear on the student's official transcript of the M.Sc. program issued by Dalhousie University and will not be included as part of the student's graduate program. The NSAC Registry will record ancillary courses.

Additional Undergraduate and Audit Courses

As part of their regular fees, graduate students may take two undergraduate NSAC courses for credit and two NSAC courses for audit of their choice in addition to their 10 required program credits. Approval is required from the student's supervisory committee for the additional undergraduate credit and audit courses.

Students may also take one audit at Dalhousie University (equivalent to six credit hours) in each year of residency of their formal program. Audits at Dalhousie University must be listed on the Program Form and must be relevant to the student's program of study. Audits cannot be taken on Letter of Permission and will not be approved as part of a Qualifying Program.

Independent Study, Directed Readings and Special Topics

Students may not register for more than two independent study, directed readings or special topics courses in any graduate program.

Passing Grade for Required Courses

Classes may be designated by the candidate's committee as 'Required' (pass mark is 'B-') or 'Ancillary' (normal undergraduate pass mark unless otherwise specified). Some graduate courses are cross-listed with senior undergraduate courses, in which case the requirements for graduate students are more demanding than those for undergraduates. If a student is permitted to take an undergraduate course (with an appropriate additional work requirement as approved by FGS Curriculum Committee) as part of their graduate course work, the minimum 'B-' grade also applies. Note that there is no withdrawal (WD) grade for graduate students (see grading chart below), except where a student formally withdraws from the program.

Grading Policy

Graduate students must achieve a minimum, or passing, grade of 'B-' in all classes required as part of their degree program. Any lower grade will be recorded as a failure. Note that there is no withdrawal (WD) grade for graduate students (see grading chart below), except where a student formally withdraws from the program.

Dalhousie University's FGS uses the following grading scheme:

Letter Grade	Numerical (%) Equivalent
A+	90–100
A	85–89
A–	80–84
B+	77–79
B	73–76
B–	70–72
F	<70

Academic Transcript

The academic transcript is a reflection of academic progress and therefore reflects both passes and failures. It cannot be altered after the fact. Accordingly, it is essential that students be fully aware of the deadlines for adding and withdrawing from graduate classes. Except for university purposes, transcripts (both official and unofficial) will be issued only on the request of the student and, where appropriate, on payment of the required fee. A student will receive only an unofficial transcript. Upon a student's request, official transcripts will be sent to other universities, or to business organizations. Graduate students are reminded that their official academic transcript must be requested directly from Dalhousie University. Official transcripts can be requested through Dalhousie's on-line system.

Incomplete Courses

A student who fails to complete the required work for a particular class during the normal period of the class will receive a grade of 'F' (Fail). However, where circumstances warrant it, a grade of 'INC' (Incomplete) may be assigned. Subsequent completion of the work following the end of the class may result in a change of grade by the class instructor, as long as the work is completed before the following deadlines:

Fall term classes	February 1
Winter term classes	June 1
Full academic year classes (e.g., AGR15700)	June 1
Summer term classes	October 1

After these deadlines, an 'INC' grade cannot be changed without permission of FGS.

Where the formal deadline for completion of work is beyond the INC deadline, the instructor can request permission from FGS to extend the INC for an approved period of time.

Where illness is involved, a certificate from the student's physician will be required. This certificate should indicate the dates and duration of the illness, when possible should describe the impact it had on the student's ability to fulfil academic requirements, and should include any other information the physician considers relevant and appropriate. To obtain a medical certificate, students who miss examinations, tests or the completion of other assignments should contact their physician at the time they are ill and should submit a medical certificate to their instructor as soon thereafter as possible. Such certificates will not normally be accepted after a lapse of more than one week from the examination or assignment completion date.

For exceptional circumstances other than illness, appropriate documentation, depending on the situation, will be required. Requests for alternate arrangements should be made to the instructor in all cases. The deadlines for changing a grade from 'ILL' to a letter grade are the same as those listed above for changing a grade from INC to a letter grade.

All outstanding grades, including 'ILL' and 'INC', must be addressed prior to registration for the next term. If grades are still outstanding into the next term and no arrangements have been made, the student may be required to re-register in the class.

In Progress Courses

The grade of In Progress may be used only to report the thesis course, research project classes, and those designated as "open to independent completion of study". Final submission of grades for project and independent study courses is April 30 for fall term courses and August 31 for winter term and regular session (AGR15700, AGR15710 and AGR15705) courses.

Academic Standards

When the work of a student becomes unsatisfactory (including insufficient progress), or a student's attendance is irregular without sufficient reason, withdrawal from one or more courses or academic dismissal from the program may be required.

Failed Courses

A student who fails to obtain the minimum grade ('B-') in any course in any year is automatically withdrawn (academically dismissed) immediately from the program. However, such a student may apply, in writing, to the NSAC Graduate Coordinator for reinstatement. Reinstatement to the program after a failing grade must be supported by the student's Supervisor, the Graduate Coordinator, and the head of the department in which the student is registered at NSAC, and must be approved in writing by FGS. Note that any academic withdrawal and reinstatement will be recorded on the student's official transcript.

Length of Program and Extensions

Graduate students have a maximum period of time within which to complete all of the requirements for their graduate program.

Usual Time Limits for the completion of degrees are:

One-year M.Sc., full-time:	2 years
One-year M.Sc., part-time:	4 years
Two-year M.Sc., full-time:	3 years

Upper Time Limits for the completion of degrees are:

One-year M.Sc., full-time:	4 years
One-year M.Sc., part-time:	5 years
Two-year M.Sc., full-time:	5 years
Two-year M.Sc., part-time:	7 years

Students may apply for extensions beyond the upper time limits. A first extension of one year may be granted by FGS on the recommendation of the Graduate Coordinator, along with a satisfactory Progress Report Form completed and signed by the student and the supervisor. A request for a second extension, the Final Extension, must be submitted to the Graduate Coordinator with a Report of Progress in the previous year together with a detailed plan and timetable for completion of the thesis within the following 12-month period. If supported by the supervisory committee, the Graduate Coordinator will forward the recommendation to the Dean of Graduate Studies, Dalhousie University for approval. The student is then expected to defend and submit the approved thesis within that academic year. Further extensions will only be given for one term to provide for necessary revisions to the thesis following defence. Under no circumstances can a student be registered in a program for more than 10 years.

Withdrawal From Program

A student who decides to withdraw from the graduate program must immediately notify, in writing, his/her supervisor and the Graduate Coordinator. The Graduate Coordinator will notify the NSAC Registrar, the Dalhousie Registrar, and the Dean of Graduate Studies, Dalhousie University. Refund of fees, if applicable, will be calculated from the date this letter is received by the Graduate Coordinator. A withdrawal is not official until it has been approved by FGS and is received in the Dalhousie Registrar's Office. Under no circumstances will FGS back-date a withdrawal notice.

Academic Dismissal

A student may be required to withdraw from the program for academic reasons (e.g., resulting from class failure, failure of ATC examination, or lack of academic progress), for academic offences such as plagiarism, for irregularities in the presentation of data, for non-academic reasons (e.g., breach of an NSAC or Dalhousie University regulation or Code of Student Conduct), or for failure to maintain registration status. The student will be notified by the appropriate body of the reason for the required withdrawal. The student has the right to appeal the decision to the Graduate Coordinator.

Readmission of Students

A student who is required to withdraw, who voluntarily withdraws, or whose registration has lapsed may apply for readmission within ten (10) years of initial registration. Readmission is not automatic because of the competition for places with incoming students. A student who is academically withdrawn may not apply for readmission for at least 12 months following the official date of the withdrawal.

Readmitted Students

Students who fail to register and pay tuition fees for any term before the degree requirements have been fulfilled are considered to have withdrawn, and will be required to apply for readmission. Readmitted students (except those who have been withdrawn for academic reasons) must pay fees for the terms in which they were not registered, to a maximum of three terms at the current "continuing fee" rate.

Readmitted students who were academically withdrawn will not be charged make-up fees for the three terms immediately following the official date of withdrawal. Make-up fees will be charged for any term thereafter, to a maximum of three terms, until the student is registered.

Students who have not maintained registration are normally required to have a satisfactory thesis in hand or a timetable for completion, approved by the Graduate Coordinator and signed by the student and thesis supervisor, before they can be readmitted.

Students may be readmitted only once during the course of their program. Application for readmission must meet normal application deadlines, and all outstanding fees must be paid.

Other Program Components

Demonstrating

As part of their graduate training all students must spend at least one academic term demonstrating in an undergraduate class. It is hoped that graduate students will participate in a variety of activities through the demonstrating position, such as preparing teaching materials, giving prelab presentations/instructions, monitoring student progress, and marking assignments. The demonstrating will normally occupy six hours per week for the teaching term and will be paid for by the department at the prevailing rate (\$ per term) unless payment is disallowed by the terms of a scholarship. Department heads, in consultation with the students' supervisors, are responsible for ensuring that each graduate student is assigned at least one demonstrating position during their program. Although departments must ensure that a position is available for every student within their department so that this program requirement can be fulfilled, students may demonstrate in an undergraduate course outside of their academic department. Students are encouraged to discuss this requirement with their supervisors and the heads of their departments early in their program. Students interested in demonstrating in an undergraduate course outside of their academic department should discuss this possibility with their supervisors, the instructors of the courses in which they are interested, and the heads of the departments in which the courses are offered. Students who arrange to complete the demonstrating requirement in courses outside of their academic department must notify their supervisors and the heads of their departments. The department in which the

student is registered will not pay for a graduate student to demonstrate in an undergraduate course that is offered outside his/her academic department. The demonstrating requirement can be completed in the student's first or second year of the program. Students may demonstrate in more than one course only with permission from their supervisory committee. Students are responsible for ensuring that the instructor of the course receives, and submits to the Research & Graduate Studies Office, a Teaching Assistantship Evaluation Report form. These forms are available from the Graduate Coordinator. The performance of students as demonstrators will be evaluated by those in charge of the course. Departments are responsible for ensuring that sufficient demonstrating positions are available to their graduate students.

Admission to Candidacy (ATC) Examination

A Research Proposal must be prepared by all students as a requirement for Admission to Candidacy (ATC). The proposal should provide a suitably documented account of the project that the student wishes to undertake for the M.Sc. degree. It is recommended that the research proposal be no more than 25 pages (double spaced, including reference list, figures, tables and appendices). Students are to develop the research proposal in consultation with their supervisor and supervisory committee members. Students should consult with their supervisory committee on issues such as the rationale behind the proposed research, important background literature, resources available, practical limitations, and the nature of the ATC examination.

Students may find the NSAC Style Manual to be a useful resource in preparing their research proposal. The aim of the style manual is to give specific guidance to students who require a standard format for writing assignments of various types. While supervisors, scientific journals, and other textbooks will provide a great deal of help, this manual will provide supplemental information to assist students in research, note taking, paper planning, and citation forms. The NSAC Style Manual is available from the NSAC Bookstore and the NSAC web site at www.nsap.ns.ca/lib/select.html.

It is recommended that students have all members of their supervisory committee review, comment on, edit and critique the proposal prior to submitting the proposal for the ATC examination. It should be submitted, together with a research proposal information form (ATC Form Part 1, available from the Research & Graduate Studies Office) and the ATC Planning Form, to the Graduate Coordinator (RGS) who will schedule the ATC examination. Sufficient additional copies of the research proposal must be provided to the Graduate Coordinator for distribution to the Supervisory Committee, External Examiner, and Chair of the exam three weeks prior to the ATC examination. One additional copy must be submitted to the Graduate Coordinator for the student's official file.

Admission to Candidacy is based on presentation of an acceptable research proposal and successful defense of this proposal before an examining committee. The examiners will consider the merit and feasibility of the proposal as well as the student's knowledge of methodology, literature and general academic background in areas relevant to the research.

Each student must pass an Admission to Candidacy examination early in their program, normally within the first four to six months in which a student is registered. If the ATC examination is not completed within the first six months of the student's program, the student must submit a request for an extension with a detailed timeline for the completion of the examination before registration for their third term of study will be permitted. The request for the extension and timeline for completion must be approved and supported by the student's supervisory committee. Students who do not complete the ATC examination within their first year of study will not be permitted to register for their second year of study. Students in a two-year M.Sc. program or part-time program may elect to delay the candidacy examination for up to one year.

The purpose of the ATC examination is:

- i) to evaluate the student's competency to pursue graduate studies in the student's chosen discipline within the context of the proposed research;
- ii) to identify and address any specific weaknesses in the student's background relevant to the proposed research area; and
- iii) to assess the merit, feasibility, and suitability of the proposed research as a graduate-level thesis.

The ATC Examining Committee will include a Chair, one External Examiner and the members of the Supervisory Committee. The Chair will normally be the head of the student's academic department of study or his/her designate. The Chair must be a member of the Faculty of Graduate Studies, Dalhousie University. In the event that the Department Head is not available to Chair the exam and a designate from the department cannot be obtained, the Vice-President Academic may act as Chair. The External Examiner may be a qualified scholar from outside NSAC, an Honorary Research Associate or Adjunct Professor of NSAC, or an NSAC Faculty member. In addition to the Chair and External Examiner, the ATC Examining Committee will normally consist of three to four examiners. Larger numbers of examiners are at the discretion of the student and the supervisor. One committee member may be replaced by an alternate examiner if it is impossible to have all members present.

The examination begins with a 15-minute verbal presentation of the proposal by the student, highlighting the goals and objectives of the research, the research strategy/methodology, and the impact, significance or benefit of the proposed research. The Chair, Supervisory Committee members, and External Examiner then question the student on the proposal and on concepts relevant to the proposal.

The examiners will keep in mind that the ATC proposal is not a detailed description of how the research will be conducted. Thus, examiners' questions will focus on general knowledge of methodology required for the project and theory relating to it. Examiners will also keep in mind that the ATC is not a comprehensive examination. Questions will arise from the scientific content of the work presented but will not range randomly over the entire field. The student is being examined for competence by evaluating his/her ability to put together a viable research project and to defend the rationale and methodology.

The Chair is expected to intervene on behalf of the student if examiners' questions are not consistent with the purpose of the ATC examination.

Decision will be by consensus and the alternatives are Pass or Fail. The Chair will vote only if the committee vote is tied. Recommendations and/or conditions may accompany a Pass outcome. If the student requires further background preparation, the student may be required to take additional courses as a condition of passing the ATC examination. Appropriate classes or remedial effort will be assigned for the following academic year. If the research proposal is not deemed to be satisfactory, the student may be required to rewrite the research document. The Graduate Coordinator will verify that these assignments are completed. A student who fails the ATC examination is required to withdraw from the program. A failed ATC examination can be appealed to the Graduate Coordinator within three working days. The student will then be re-examined within two weeks by the Chair, the student's Supervisor, and three faculty members not on the original examining committee.

Thesis

A satisfactory thesis embodying contributions to research must be presented and successfully defended in a public oral examination.

Supervisor and Supervisory Committee

All thesis students must have a Supervisor (or co-supervisors) and a Supervisory Committee. The appointment of a supervisor is a prerequisite for admission into the graduate program.

Students are not admitted until their research areas have been identified and faculty members have agreed to supervise them. A faculty member becomes the graduate student's

supervisor upon signing the Confirmation of Intention to Supervise form. The student's supervisory committee is to be in place within the first month of the student's initial registration in the program. Students are advised to meet with their supervisory committees early in their program (i.e., as soon as the committees are formed).

Supervisor

A thesis supervisor or co-supervisor must be a member of the Faculty of Graduate Studies, Dalhousie University. Members holding post-retirement appointments or active in research in retirement cannot normally take on new students to supervise, but they can co-supervise with a full-time member of FGS. The supervisor is the person who will be most directly involved in overseeing the student's research program. The supervisor must obtain written approval from the Department Head for each M.Sc. student he/she intends to supervise. The following potential difficulty should be drawn to the attention of new students: Some restriction of students' freedom to follow their own lines of research may result from dependence upon supervisors' research grants for a significant portion of their income. When conflicts of interest arise, the Graduate Coordinator and the student's supervisory committee should play a significant role in overseeing the development of the research and in protecting the student against the loss of academic freedom.

The supervisor must meet with the student to select courses before classes commence. If the student is not on campus by this time, the meeting must take place within one or two days of arrival.

The responsibilities of the supervisor at the first meeting with a graduate student are:

- to check whether the student has registered and to advise on correct registration procedures, if necessary;
- to help the student plan course work, and advise on all requirements for the program;
- to determine which courses are required and whether any should be designated ancillary or audit;
- to ensure that the student has suitable working space and facilities for research;
- to assign any language or auxiliary skill requirement;
- to advise students as to where they can obtain information on matters such as health insurance, social insurance numbers, housing, and finances.

If a supervisor is not available to assist the student (e.g., the supervisor takes a one-year sabbatical leave), he/she must arrange an alternative (interim) supervisor for the student. The name and the expected duration of tenure of the interim supervisor must be reported to the Graduate Coordinator in writing.

In addition, each supervisor consents to:

- guide and assist their graduate students;
- serve on examining committees for ATC examinations and thesis defences;
- teach in a graduate module course or graduate course;
- contribute information to the annual reports of the Graduate Program;
- encourage dissemination of results and interaction of graduate students with other students and faculty through research seminars and other means.

The Supervisor and the student are responsible for recommending to the Graduate Coordinator the names of three suitable potential external examiners for the ATC examination and the names of three potential external examiners for the thesis defence.

Supervisors are responsible for initiating the thesis defence; they are also responsible for making arrangements for travel and accommodations and for hosting external examiners, if necessary. Supervisors are responsible for all costs associated with the thesis defence (e.g., travel costs of external examiners).

Co-supervision

Four types of co-supervision are recognized:

- (i) where a co-supervisor is added because the other supervisor does not have an appropriate academic qualification (e.g., does not have a Ph.D. or equivalent);
- (ii) where a student wishes to draw equally upon the expertise of two supervisors from different disciplines;
- (iii) where a new faculty member is introduced to the standards of the department by providing an opportunity to work with an experienced supervisor; and
- (iv) where required to conform to Dalhousie University Faculty of Graduate Studies' practice regarding external supervisors or supervisors not from the student's department or program. An Adjunct faculty member may be the academic supervisor of a student provided the student also has an internal advisor to handle the administrative details. This is usually done to support the student within the program rather than for reasons of academic need.

Students are advised to meet with their co-supervisors, together, early in their program to clarify the roles, responsibilities and expectations of each co-supervisor and to devise a communication strategy with each co-supervisor (e.g., in some instances, students with co-supervisors will be expected to work closely with only one of the co-supervisors on the thesis research project while in others a student may be expected to meet with both co-supervisors regularly regarding the thesis research).

Supervisory Committee

A Supervisory Committee is recommended by the supervisor in consultation with the student, and should complement the expertise available to the student in completing his/her research program. This committee is responsible for guiding the graduate student through the program. It consists of the Supervisor and other persons with expertise or interests relevant to the student's field of study. Its composition must be reported to the Graduate Coordinator within the student's first academic term of study or when the student applies for admission to candidacy, whichever occurs first. All supervisory committees are approved by FGS.

The supervisory committee consists of the supervisor and at least two others. Supervisory committee members may be chosen from outside NSAC; however:

- where the supervisor is not a full-time faculty member of NSAC, a co-supervisor from NSAC must be appointed. This person is responsible to NSAC for the student's progress;
- the majority of committee members must be members of FGS and full-time faculty of NSAC. Additional members of the non-university/college community (such as practising professionals) may be appointed to the supervisory committee where their particular expertise makes it appropriate. The appointment of a non-member of FGS, including any non-regular appointments, requires permission from the Dean or Associate Dean of Graduate Studies, Dalhousie University, for the individual to become a formal member of the supervisory committee. Non-members of FGS must be approved as External Scholars by the Dean of Graduate Studies. Supervisors should contact the Graduate Coordinator for more information on the approval process.

Although the Admission to Candidacy (ATC) examination is the first official meeting of the supervisory committee, supervisory committees are strongly recommended to meet before the ATC examination. It is recommended that the supervisory committee meet with the student before the ATC examination to discuss the student's program (e.g., courses) and proposed research project.

Supervisory committees are to meet at least twice a year during the thesis research period and more often in the writing stages of the student's program. Normally the agreement of all committee members is required before a thesis is brought forward for examination. Supervisory committees are responsible for reviewing the student's Annual Progress Report and assisting the student in completing the Annual Progress Report form, which is received and reviewed by the Graduate Coordinator prior to being submitted to FGS.

Supervisors should encourage students to consult other members of their supervisory committee, either individually or as a group, whenever it is useful. Students have the right to call a committee meeting at any time. The committee should also have opportunities to critique the work in progress and make alternative suggestions before it appears in thesis form. Students and supervisors are therefore encouraged to call the committee together to discuss research progress more often than the statutory twice per year described above. (Note: at least one meeting per academic term is recommended.)

Supervisory Committee Member's Responsibilities

Each member of a supervisory committee is responsible for:

- providing guidance to allow for the student's intellectual growth to become a competent contributor to a field of knowledge. In this context, the supervisory committee must provide constructive criticism and provocative discussion of the student's ideas as the program develops. The committee should ensure that the student is exposed to a wider range of expertise and ideas than can be provided by the advisor alone.
- being reasonably accessible to the student for consultation and discussion of the student's academic progress and research problems, and directing the student, as appropriate, to consult with experts outside the committee.
- ensuring that a "program of study" is established with the student's involvement and that it is formally approved by the committee, the student, and the Office of Research & Graduate Studies.
- as far as possible, identifying current and anticipated problems that may arise in the student's program and helping to alleviate them.
- Meeting regularly to review the student's progress and constructively advance the student's research. The frequency of meetings will vary according to the stage and nature of the student's program.
- confirming and approving annual progress reports to the Office of Research & Graduate Studies and Dalhousie University Faculty of Graduate Studies. Ensuring that progress reports include concerns or document when the progress being made is unsatisfactory.
- informing the student of the approximate time it will take for submitted written material to be returned with comments, with a normal maximum duration of two weeks.
- reading and commenting on drafts of written material and indicating whether or not a major paper is complete or a thesis ready for submission to the final examination committee.
- conforming to the basic principles of academic integrity and professionalism in the development of a mature and objective relationship with the student.
- respecting and conforming to the scholarly integrity and conflict of interest guidelines of NSAC and FGS.

Registration

It is the student's responsibility to register on the day(s) specified for graduate student registration. Students must register for each term (Fall, Winter and Summer). Registration is the process by which the student officially establishes with NSAC (through the Research & Graduate Studies Office) courses to be taken in the M.Sc. program and status (full-time, part-time), and

pays the appropriate academic fees. Both aspects of the process (course registration/status and fee payment) must be completed before a student can be said to be registered.

Graduate students may take graduate courses offered at NSAC and at Dalhousie University. This provides graduate students in the M.Sc. program in Agriculture with a wide variety of courses from which to select. Graduate courses offered at NSAC are listed in the NSAC 2005/2006 Calendar, available from the NSAC Registrar or NSAC Research & Graduate Studies Office, and are listed on the NSAC web site (www.nzac.ns.ca/rgs/graduate/course.htm). Graduate courses offered at Dalhousie University are listed in the Dalhousie University Graduate Studies Calendar 2005/2006 and are available on the Dalhousie web site at www.dalgrad.dal.ca.

Students must register for each term (Fall, Winter and Summer) at both Dalhousie University (carried out via the web at www.dal.ca/online) and NSAC (carried out via NSAC's Datatel Web Registration System at www.nzac.ns.ca/reg/register.htm). Students are reminded that they must keep their mailing address up to date.

To register, all graduate students in their first year of study must do the following during their first three academic terms:

(i) Meet with the Graduate Coordinator for a student interview/ registration appointment to complete the relevant forms that indicate the student's presence on campus and intention to study for a graduate degree during the ensuing year. At the student interview, the student will be required to (1) identify his/her supervisor and proposed supervisory committee members, and (2) provide a list of courses, approved by the student's supervisor or committee as necessary to complete the student's M.Sc. requirements. Thus, students must meet with their supervisors prior to their registration appointment. The Graduate Coordinator will assist the student with on-line registration procedures at NSAC and Dalhousie University and with the formal completion of the Program Approval form. The completed forms will be submitted by the Graduate Coordinator to the NSAC Registrar and the Dalhousie Dean of Graduate Studies. Any change in courses after the interview must be approved by the Supervisor and the Graduate Coordinator.

(ii) Arrange for medical insurance coverage. NSAC does not offer or provide medical insurance for students. International students must have health insurance and are to apply for health insurance immediately upon their arrival in Canada through the NSAC Student Services Office. Fees for health insurance are billed directly to each international student's account at NSAC, and must be paid on the student's arrival. International students must show proof of medical insurance prior to registration. Canadian students are not mandated to show proof of medical insurance prior to registration; however, they are responsible for ensuring that they have adequate medical insurance that meets their needs.

(iii) Arrange for payment of fees through Financial Services, 2nd Floor, Cumming Hall.

(iv) Obtain a student ID card from NSAC Student Services, Dairy Building.

Graduate students in their second year of the program and beyond will receive a registration package by mail. This package will contain:

- deadline dates by which registration must be completed;
- procedures to be followed to register at NSAC via the on-line registration system;
- procedures to be followed to register at Dalhousie University via the on-line registration system;
- procedures for the payment of tuition fees; and
- specific information on procedures to follow to change academic status, program requirements, etc.

Continuing students who require an extension to their program or have an outstanding Progress Report will not be permitted to register until the extension or progress report has been officially approved by the Faculty of Graduate Studies.

Late registration is permitted until the last day for adding courses. All students must register on or before the deadline for each term. Students who do not register on or before the last day to register must apply in writing to the Graduate Coordinator for permission to register. Late fees are waived only in extenuating circumstances and at the discretion of the Vice-President Administration. Registration after the final deadline is normally only permitted in unavoidable circumstances such as illness or required absence for research at the beginning of the next academic year (in September).

Any student who fails to register and pay tuition fees by the approved deadlines may neither submit a thesis nor obtain any services from NSAC or Dalhousie University during that semester. Continuing students who fail to register by the final deadline will be automatically withdrawn from their program and will have to apply for readmission by the next available admission date.

An individual program of study must be approved for every graduate student. The program of study for each graduate student must be approved by the Graduate Coordinator and submitted for final approval to FGS. The Graduate Coordinator will enter the proposed program (with the total number of credits required, the names and numbers of courses required (including ancillary courses), and any other requirements and conditions) on the Program Form. The student, the supervisor, and the Graduate Coordinator must sign this form prior to submission to FGS. The signed form is to be submitted to FGS within the first term of the student's program of study. Once approved, the Program Form constitutes an agreed contract between the student and NSAC/Dalhousie University for the requirements to complete the M.Sc. program. Any changes to the approved Program Form must be agreed to by the supervisor, Graduate Coordinator and FGS by submission of a Program Update form. It is the obligation of the supervisor to inform all supervisory committee members of both the content of the original Program Form and any changes made to the original Program Form.

Concurrent Registration

A student may, with the permission of the Dean of Graduate Studies, register for two concurrent degrees, either at Dalhousie or one at Dalhousie and one elsewhere, for a maximum of twelve months, usually the first academic year of the graduate program. This does not apply to an NSAC/Dalhousie student finishing his/her M.Sc. degree who has been accepted into a Ph.D. program. In that case, the student must first complete the Master's degree and then register in the Ph.D. program in January, May or September as applicable and approved by the department. If the student fails to complete the Master's degree for a particular entry point, the onus is on the department to defer the admission to the next available start date.

Leave of Absence

Students who need to take leave from their program of study because of illness or a serious problem outside the student's control may apply in writing through the Graduate Coordinator for a Leave of Absence. If NSAC recommends to FGS that the Leave of Absence be granted, and if FGS is also satisfied that the need is justified, such leave will be granted. An official Leave of Absence does not count toward time in the program. Students may not hold stipends or scholarships during a Leave of Absence. During a leave of absence, a student cannot study elsewhere for credit at NSAC or Dalhousie University. Leaves of Absence will not be approved retroactively.

Leaves of Absence can be granted for the following periods: September to December; January to April; and May to August. Students may apply for successive term leaves up to a maximum of three terms (one year).

Applications for Leave of Absence (limited to a total of three terms during an individual's program) must be made by August 12 for a leave commencing September 1, December 9 for a leave commencing January 1, and April 15 for a leave commencing May 1.

A Leave of Absence not only frees the student from the necessity of paying tuition fees, it also releases NSAC and Dalhousie University from the obligation to provide the student with services. These include consultations with professors, library and computer privileges, health services, and other student services.

Suspension of Studies

Unexpected emergencies that arise during the term cannot be accommodated by a Leave of Absence. Such cases can be accommodated through a suspension of program but no fee rebate is possible. A student must apply in writing to FGS for a suspension of program stating the reasons and the length of time requested, and it must be supported by the NSAC Graduate Coordinator. A suspension relieves the student from responsibilities for completing classwork and other program requirements, but it does contribute to time in the program (i.e., the clock does not stop ticking). Normally, a suspension of studies shall be for no longer than one term. Disposition of courses registered for during a term of suspension of studies must be agreed upon by NSAC, and approved by FGS.

Parental Leave

Parental leave will be granted, without prejudice to academic standing, at the time of pregnancy, birth or adoption. A parent may request up to three terms of leave, which must be completed within twelve months of the date of birth or custody. Where both parents are graduate students seeking parental leave, the total number of terms may not exceed four. While on parental leave, students do not register or pay fees to NSAC. Any refund of fees will be governed by university regulations. Parental leave not only frees the student from the necessity of paying fees, it also releases Dalhousie University and NSAC from the obligation to provide the student with services. These include consultations with professors, library and computer privileges, health services, and other student services. It is recommended that students planning to take parental leave not only give adequate notice to their supervisor but also discuss issues such as future plans and progress, stipend support, and research deadlines. Only under well-documented extenuating circumstances will retroactive approval be given for parental leave.

Identification Cards

Full-time and part-time students will receive both NSAC and Dalhousie ID numbers. Students will receive NSAC ID cards that will entitle them to Novanet library services. The Novanet consortium comprises nine postsecondary institutions: Dalhousie, SMU, MSVU, St FX, UCCB, Kings, NSCC, NSCAD and NSAC. Students will have borrowing privileges at all of the above-listed institutions. Contact the NSAC MacRae Library for more information. Please note that because students are registered at Dalhousie University and are also given a Dalhousie ID number, NSAC graduate students can access the proxy server at Dalhousie University that allows access to the Dalhousie Library databases and electronic journals. Students will need their Dalhousie ID number to access their grades, and to update their personal information on Dalhousie's on-line access system at www.dal.ca/online.

Notification of Address

Correspondence from Dalhousie University and NSAC will be sent to the most recent address on file at these institutions. Students will be held responsible for complying with all notifications sent from either institution. Non-receipt of material because of failure to report a change of address will not excuse students from program responsibilities.

All students must report their local address while attending the M.Sc. program to the Research & Graduate Studies Office, on registration or as soon as possible thereafter, and subsequent changes must be reported promptly. Changes of address must be reported to the Graduate Coordinator and a Change of Address form must be completed. The Graduate Coordinator will notify the NSAC Registry and Financial Services of the change in address.

Students are also required to ensure that Dalhousie University has their current mailing address, by updating their address on Dalhousie's on-line system (www.dal.ca/online—select "Update Address(es) and Phone(s)" from the Personal Information menu and add a new address, select the type to add and click the "Insert" button). Students will need their Dalhousie ID number and a password to enter the system.

E-mail

E-mail is an authorized means of communication for academic and administrative purposes within Dalhousie University and NSAC. All students will be assigned an official e-mail address by both Dalhousie University and NSAC. Both the Dalhousie University and NSAC e-mail addresses will remain in effect while the student remains a student. These e-mail addresses will be used for communication with students regarding all academic and administrative matters. Any redirection of e-mail will be at the student's own risk. Each student is expected to check both his or her official NSAC and Dalhousie University e-mail addresses frequently in order to stay current with program communications.

Change of Name

Students who change their name while attending the M.Sc. program must provide proof of name change (e.g., marriage or divorce certificates, official name change form, etc.). Students are to contact the Research & Graduate Studies Office for additional information.

Full-Time, Part-Time, and Other Categories

A full-time student is a student who has been approved by NSAC and FGS as working full-time on a graduate degree. A student may register full-time and hold a job simultaneously only if the job involves no more than 16 hours' work per week, including the hours worked as a teaching assistant.

A part-time student is a student who has been approved by NSAC and FGS as working part-time on a graduate degree. A part-time graduate student cannot carry more than 8 credit hours per term.

A continuing student is one who has completed the program fee and residency requirements but has not yet finished all the degree requirements (usually the thesis). The student is required to pay a continuing fee on a per-term basis.

A qualifying student is a person with a Bachelor's degree or its equivalent who meets normal admission standards and in whom NSAC has expressed an interest as a potential graduate student, but who is without sufficient academic background in a particular discipline to be enrolled directly into the Master's program. For example, a Qualifying Year may be used for a student to take an Honours equivalency certificate, or to take a year of senior undergraduate courses in an area of deficiency in their undergraduate degree. Only in exceptional circumstances may a student be admitted to a Qualifying Year to upgrade a below-standard undergraduate degree or academic record.

Qualifying students can be full-time or part-time. Because it is a prerequisite, a qualifying program cannot be used to reduce the length of a subsequent regular graduate program. Qualifying students are not eligible for scholarship or bursary support, and must apply for admission to the graduate program in the usual way toward the end of the qualifying period.

They must pass all classes with no grades below 'B-' and an average of at least 'B', and fulfill any other requirements in order to be considered for admission.

Special students are those students who are permitted to take a graduate class outside the Master's program. Such students, although they have not been admitted to the Master's program, may normally take a maximum of two full-credit classes with the permission of the class instructor and the Graduate Coordinator. Because all graduate classes must be taught at a consistent standard to graduate level students, non-program students must have records which meet the minimum entrance requirements for the graduate program (hence they must be approved by FGS, as admissible to the graduate program). Students are ineligible to apply for Special Student status in a class if they have been rejected from the program on account of academic standing, or have been withdrawn from the program. Students trying to qualify for entry to a graduate program must follow a different route: either a Qualifying Year program, if eligible, or a program of study as a Special Student in an undergraduate faculty. Classes completed as a Special Student may not be used for credits toward the formal graduate program unless approval has been granted by FGS at the time of admission.

A letter confirming a student's registration and/or scholarship or stipend status can be produced on request. Students should contact the NSAC Research & Graduate Studies Office for information on this service.

Fees

Graduate students pay "program fees" for fixed periods, either as full-time or part-time students, followed by "continuing fees" until all program requirements have been completed. The current fee schedule is available each year in July. It can be obtained from the NSAC Research & Graduate Studies Office or the NSAC web site at www.nsac.ns.ca/rgs/graduate/index.htm.

Program Fees for Full-Time Students

Full-time graduate students pay program fees for a specific number of years depending on the program, after which they pay continuing fees until all the program requirements are completed. The one-year M.Sc. program involves a program fee requirement of one year (i.e., students admitted to the one-year program are required to pay three consecutive terms of full-time program fees). The two-year M.Sc. program involves a program fee requirement for the first two years of study. If students have to continue beyond the program fee requirement period to complete their degree, additional (continuing fees) are required.

Program Fees for Part-Time Students

Part-time graduate students pay the same program fees as full-time students, spread over three part-time years of study for every full-time year. If a part-time student completes the requirements for the degree before the full program fees have been paid, the balance of those fees must be paid prior to graduation.

In other words, a part-time student entering the one-year M.Sc. program will pay 9 consecutive terms of part-time fees, and a part-time student in the two-year program will pay 18 consecutive terms of part-time fees. Students who complete their part-time programs in less time will still be required to pay part-time program fees for the outstanding terms before they are approved for graduation.

Continuing Fees

Students who have completed the required program fee period and have paid all their fees, but are still short of completing their program, must pay a continuing fee until all the academic requirements of the program have been completed. Students are assessed continuing fees on a

per-term fee basis. Usually, continuing fees are paid by students who are in the process of completing their thesis.

Graduate students must maintain continuous registration until their program requirements are complete, unless they are granted a formal Leave of Absence. Payment of fees is required for students to maintain their status in the program.

Procedures for Payment of Fees

Students will be billed in September for the Fall term; January for the Winter term; and May for the Summer term. Payment in full is due on the last day for registration (as published in the Graduate Program Procedures Manual) in each of the Fall, Winter and Summer terms. Fees not paid by the last day for registration will be subject to interest charges, and the student's registration may be cancelled. In exceptional circumstances, graduate students may arrange with the Graduate Coordinator to pay tuition fees on a monthly basis. The first payment of a monthly payment plan is payable upon registration. NSAC has the right to deduct tuition fees directly from a student's stipend, NSERC PGS, IPS, or Canada Graduate Scholarship award (or any other outside scholarship paid to NSAC to administer on behalf of the funding agency) should the student's account go into arrears or not be paid by the last day of registration.

Graduate students may not submit their approved thesis to Dalhousie University for binding nor will they be granted their degree or official transcripts until outstanding fees are paid in full. Any late fees and interest charges that apply to undergraduate students also apply to graduate students.

Students who have outstanding balances and who have not received permission to register from the Vice President Administration are not permitted to register for a further term. Students with outstanding account balances are required to meet with the Vice President Administration to sign an Outstanding Fee Form detailing in what manner the fees are to be paid and from which sources the funds are expected to arrive.

Course Selection and Enrolment

Selecting a Program

Students should meet with their supervisors before classes begin and design a complete program of suitable courses for each year of study. It is the student's responsibility to arrange this meeting. In selecting appropriate courses, the student must bear in mind the following:

- All graduate students must enroll for Thesis Research (AGRI9000) every semester even though they may expect to make little progress in that semester.
- Students in the one-year M.Sc. program are strongly encouraged to take all course work during their first year. However, if necessary, courses may be spread over more than one academic year.
- Graduate credit is obtained only for graduate courses, which are denoted by a 5000 number or above.

Financial Support

NSAC offers numerous entrance scholarships and research assistantships to eligible graduate students. All applicants to the Master of Science program are automatically considered for scholarship eligibility. The availability of research assistantships varies annually and from one area of research to another. Many research assistantships are posted on the Research & Graduate Studies web site at www.nzac.ns.ca/rgs/graduate/index.htm. We encourage you to check the site regularly for opportunities in an area of research that may be of interest to you.

Several Differential Fee Waivers are awarded to international students annually. All international applicants are automatically considered. Differential Fee Waivers are awarded on the basis of academic merit and financial need.

The M.Sc. program requires that students assist in the teaching of at least one undergraduate course. Not only do students gain teaching experience but they are also reimbursed financially in the form of a Teaching Assistantship.

Stipends (Research Assistantships)

All graduate student stipends will be classified as scholarships regardless of their source. Graduate students are to be informed of the rate of the stipend prior to registration. Once a stipend rate is selected, that rate normally remains in effect for the duration of the stipend payment (usually 24 months). However, the rate of the stipend may be renegotiated if there is any change in the student's official academic status (e.g. change from full-time to part-time status) or if the student receives a major scholarship (e.g. NSERC PGS A, NSERC IPS, etc.). NSERC scholarship holders are expected to adhere to NSERC's Award Holders Guidelines (www.nserc.ca). NSERC expects award holders to devote the majority of their time to the expeditious completion of their degree program. As a guideline in this context, NSERC strongly suggests that award holders limit the number of hours of employment per 12-month period to 450. Award holders may not accept remuneration or supplements paid from other NSERC grants, whether paid as a scholarship or salary. Part-time NSERC PGS holders are not permitted to be employed during tenure of the award without NSERC's prior authorization.

Stipend payments are managed by and distributed from the Research & Graduate Studies Office. Students receiving stipend support will receive stipend cheques on a monthly basis, at the beginning of each month. For these students, the first cheque will be issued 30 days following initial registration (i.e., if the program start date is Sept. 1, the first stipend cheque will be issued on October 1, etc.). Graduate students funded under national scholarships (e.g., Canada Graduate Scholarships, NSERC Postgraduate Scholarships (PGS), NSERC Industrial Postgraduate Scholarships (IPS), etc.) will also receive their scholarships on a monthly basis at the beginning of each month. NSAC has the right to deduct tuition fees directly from the student's scholarship should the student's account go into arrears. Students with questions regarding their stipend payments are encouraged to contact Marie Law at the Research & Graduate Studies Office (mlaw@nsac.ns.ca; 893-6502).

Stipends and scholarships are considered taxable income, and must be reported on annual income tax returns. Students will receive the forms necessary to complete their income tax returns (T4 and/or T4A slips, and tuition credit receipts) from NSAC Financial Services annually. For tax purposes, stipends are considered scholarships rather than payment for work, and income tax is not withheld. It is advised that students set aside a portion of their income to pay income taxes that may be owing.

Research Costs

A student's supervisor is responsible for costs directly associated with research for the thesis, but all costs associated with writing and presenting the thesis are the student's responsibility.

Self-support

On the few occasions when a student is accepted to the M.Sc. program with no financial support, NSAC requires that the student submit a letter waiving any responsibility on the part of NSAC for financial support for the duration of the given program. However, this does not negate the possibility that support funding may subsequently be procured during or after the initial year.

Conference Grants

Students planning to present their research at a scientific meeting may apply to the Graduate Coordinator for a grant towards their expenses. Application forms are available from the Graduate Coordinator. A student may expect only one conference grant (up to a total of \$)

during the course of the M.Sc. Program, subject to the approval of the Graduate Coordinator, as financing permits. Receipts for expenses are required.

Thesis Regulations

Ethical Review

Research Involving the Use of Animals

Research involving the use of animals must be approved by the NSAC's Animal Care & Use Committee (ACUC). The two key functions of this committee are:

- to ensure that NSAC is in compliance with the Canadian Council on Animal Care (CCAC) with respect to standards and guidelines for the use of animals in research, teaching and testing; and
- to monitor the numbers of animals used in research, teaching and testing according to purpose and level of invasiveness. This latter information is compiled with information from other institutions across the country by CCAC to provide accurate reports on the use of animals in research, teaching and testing.

Graduate students wishing to work with animals must refer to the materials provided by the CCAC and consult with members of the ACUC as they design their experiments or field studies, and as they prepare for teaching laboratories. The CCAC "Guide to the care and use of experimental animals", "Guidelines on choosing an appropriate end-point in experiments using animals for research, teaching and testing", and several other documents are available in the library, and personal copies can be made available to interested individuals. The CCAC web site (www.ccac.ca) provides more details on their mission, policies and available guidelines.

Graduate students who will be working with animals are required to take the module entitled "Experimental Animal User Training". This module will be offered in October 2005 and January 2006. A description of this module can be obtained from the NSAC Research & Graduate Studies Office.

Approval by the ACUC is required for all animal use, on or off campus, in which NSAC faculty, staff or students are involved. Any teaching, research or testing use of animals requires an Animal Care & Use Protocol, signed by an authorized representative of the ACUC, prior to assignment of animals to the project. This is true even if the procedures are non-invasive (for example, behavioural observations) or similar to routine management of the animals. All staff have the right to refuse to participate in animal use procedures not approved by ACUC. In addition, noncompliance with CCAC guidelines can result in withdrawal of funding across the campus by the national granting agencies.

Electronic copies of the Protocol forms (separate forms exist for teaching, research and renewals/extensions) are available from the Department of Plant and Animal Sciences (893-7998)

For further information, contact:

Dr. Jim Duston
Chair, Animal Care & Use Committee
Department of Plant and Animal Sciences
893-8639
jduston@nsac.ns.ca

Research Involving Human Subjects

All thesis research involving human subjects must be approved by the NSAC Research Ethics Board (REB). Projects which might typically arise at NSAC and which would require REB review are questionnaires, surveys, or interviews of individuals, where the human being is the subject of the investigation and personal opinions and practices are documented. Graduate students are to submit their proposals to the Graduate Coordinator who will, in turn, forward it to the REB Chair. The REB will meet regularly. The schedule of REB meetings is available at the

Research & Graduate Studies Office. All proposals being submitted to the REB must be received at least 7 working days before the REB meeting in which they are reviewed. Meeting this deadline does not guarantee the review of the proposal at the next REB meeting; the REB is, however, committed to efficiently reviewing proposals. Students should allow six to eight weeks for processing. A copy of the NSAC letter of ethics approval will be forwarded to Ms. Lindley, Office of Research Services (Room 337, Arts and Administration Building, Dalhousie University, Halifax, NS, B3H 4H6) to put in the student's official file at Dalhousie University. Complete details on the NSAC's REB Policy and Process can be found on the Research & Graduate Studies Office website at www.nzac.ns.ca/rgs/research/ethics.htm. For further information contact the Research & Graduate Studies Office, Cumming Hall, NSAC (893-6360 or 893-6502) or Lauranne Sanderson, Chair, Research Ethics Board, Department of Business and Social Sciences, Humanities House (lsanderson@nsac.ns.ca).

Research Involving Biohazards

Researchers, graduate students and instructors using or proposing to use biohazards must obtain certification from the NSAC Biosafety Officer that the laboratory procedures being employed comply with the safety precautions necessary for the level of containment required for the organisms used. The NSAC Biosafety Officer is Dr. Glenn Stratton, Department of Environmental Sciences (gstratton@nsac.ns.ca). Approval to acquire, purchase, and use biohazards at NSAC must be obtained from Dr. Stratton. Applications for an internal permit for the acquisition and use of biohazard materials may also be obtained from Dr. Stratton. These new regulations apply to all infectious agents of plants and animals (bacteria, prions, viroids, fungi, viruses, parasites), recombinant DNA, cell lines, microbial toxins, and transgenic plants and animals ordered for either research or teaching purposes, regardless of their perceived pathogenicity. For additional information on biohazards, risk groups of pathogens, and containment level requirements, please refer to the Laboratory Biosafety Guidelines on Health Canada's Office of Laboratory Security website at www.hc-sc.gc.ca/pphb-dgspsp/ols-bsl/index.html. Further information on NSAC policies and procedures for working with biohazards can be obtained from Dr. Stratton.

Research Involving Radioactive Materials

Researchers, graduate students, and instructors using or proposing to use radioactive materials must obtain permission and approval from the NSAC Radiation Safety Officer. The NSAC Radiation Safety Officer is Dr. Robin Robinson, Department of Environmental Sciences (rrobinson@nsac.ns.ca); the Assistant Radiation Safety Officer is Anne Swan, Department of Environmental Sciences (aswan@nsac.ns.ca). The following forms are available from the Radiation Safety Office:

- Application for Internal Permit for Acquisition and use of Radioactive Materials
- Application for Internal Permit for use of Radioisotope Using Animals

All researchers, graduate students, and staff using radioactivity must provide proof of completion of a radiation use and safety training program to the NSAC Radiation Safety Office. For information on the radiation use and safety training program offered at NSAC please contact Anne Swan.

Preparation of the Thesis

An acceptable thesis will describe in clear and concise language a contribution to knowledge of sufficient value to merit publication. It must be prepared according to instructions published by the Faculty of Graduate Studies and conform to Dalhousie University's requirements for thesis. The FGS Regulations for the Submission of Theses is available from the NSAC Research & Graduate Studies Office and from the FGS website. All thesis students must obtain a copy of these regulations, and students are responsible for ensuring that their thesis complies with all aspects of these regulations. Failure to do so may cause delays in completion, and may even

result in the cancellation of a scheduled defence. Students and supervisors are referred to the CBE Style Manual for Authors, Editors and Publishers as a possible resource for guidelines of thesis style.

The thesis must be written by the student, but advice and constructive criticism from members of the supervisory committee should be sought during its preparation. Students are also encouraged to present a synopsis for discussion and conditional approval before beginning to write, but formal approval by the supervisory committee is not mandatory. Responsibility for the document presented rests with the student. The examining committee, in judging the thesis, is concerned primarily with the quality of the work and evidence of research contributions to knowledge. Students are encouraged to publish the results of their work at any stage of their graduate program but must avoid conflict of copyright or contractual agreement. Students who have concerns regarding conflict of copyright or contractual agreement are urged to discuss these issues with their supervisor or to contact the NSAC Research & Graduate Studies Office for further information.

Thesis Originality and Editing

A thesis must present the student's own work, and all students are advised to read the university's regulations on plagiarism (including self-plagiarism). Dalhousie University's regulations on plagiarism can be found in the FGS Policy on Integrity in Scholarly Activity (available from Dalhousie University).

All students are expected to write their theses (and indeed, all their papers) in excellent English. While editorial correcting occurs as part of the supervisory process (as sections of the thesis are read and commented upon by supervisory committee members), faculty are not expected to have to make excessive correction to the standard of English. A committee member may refuse to read materials if they are not of an adequate standard of writing and expression for a graduate-level program. Supervisors should identify English problems early on and ensure that the student takes corrective measures, such as attendance at writing workshops. Requirements to improve a student's standard of English can be made compulsory if the student's language deficiencies are problematic to the progress and success of the research.

Just as the academic content of the thesis must reflect the student's own work, so must the standard of writing and expression. While students are encouraged to make use of standard spelling and grammatical checkers within their word processing software and have individuals proofread their papers and draft manuscripts, the use of "professional" editorial services (other than strict proofreading and formatting) is prohibited. The use of editorial services which provide substantive rewriting and/or improvement of the written English within a thesis is a form of academic fraud (similar to plagiarism) because it presents a standard of work that has not been achieved by the student and is therefore giving a false impression of the quality of the student's work. If the use of any professional services is contemplated, students must consult with their supervisor and Graduate Coordinator before taking any action. The Graduate Coordinator will contact the FGS office for advice if needed.

Submission of Thesis for Examination: M.Sc. Thesis

All students must refer to the schedule of Academic Deadlines in the Dalhousie University Graduate Studies Calendar 2005/2006 for submission deadlines and registration deadlines. Students must be registered for the term in which they present their approved unbound theses to FGS, Dalhousie University, and for the term in which they have their defence. Students will not be permitted to submit their theses or proceed to defence until they have appropriately registered and all fees have been paid. Deadlines for the submission of fully completed and approved theses (following examination and revision) are final in all cases. Failure to meet the deadlines will result in additional registration fees being applied. It is the responsibility of the student to ensure that all regulations have been met. Failure to comply with the regulations can result in delay in graduation.

Students must submit a completed Thesis Defense Planning form, signed Supervisor Thesis Defense Signature form, and sufficient copies of the M.Sc. thesis for each member of the examining committee (including the supervisor, supervisory committee members, external examiner, chair, and graduate coordinator) to the Graduate Coordinator before the date of the thesis defense is finalized. The thesis must be complete and suitable for printing, if accepted. The defense date is set for a minimum of three weeks following the receipt of the thesis and accompanying documentation at the Research & Graduate Studies Office. (The Thesis Defense Guidelines document is available at the Research & Graduate Studies Office.) Graduate students are encouraged to meet with the Graduate Coordinator six weeks prior to their intended defense date to discuss preparations required for the defense and to obtain the necessary forms (Thesis Defense Planning form and Supervisor Thesis Defense Signature form).

Thesis Defence

Appointment of Examiners

The Thesis Examining Committee is usually the Supervisory Committee, an External Examiner and the Department Head, who chairs the examination. The external examiner is recommended by the student's supervisor in consultation with the student. In selecting the external examiner, the following priority should be used: (a) qualified scholars outside of NSAC (e.g., member of a graduate faculty of another university), (b) Honorary Research Associates and Adjunct Professors of NSAC, (c) NSAC Faculty from a department other than that with which the student is most closely associated, (d) NSAC Faculty from the department with which the student is most closely associated, but not on the student's supervisory committee. The external examiner must not have been involved with the supervision or direction of the thesis, and must be in a position to render an objective and impartial assessment of the quality of the work. The external examiner may be a non-faculty member (such as a practising professional who does not hold an Adjunct appointment with a university) when it is deemed that they have the appropriate professional and academic qualifications and expertise to assess a graduate thesis. In all cases, the external examiner must be approved by the Vice President Academic, NSAC. The external examiner does not necessarily attend the defence but may instead submit a written report and questions prior to the examination.

The main role of the Chair is to ensure that the procedures are carried out in an appropriate manner, to record the examiners' written comments and the results of the examination for inclusion in the student's file, and to inform the NSAC Research & Graduate Studies Office of the outcome.

Supervisors, in consultation with their students, are responsible for completing the Thesis Defence Planning form (available from the Research & Graduate Studies Office). The Thesis Defence Planning Form must be submitted to the Graduate Coordinator at least four weeks prior to the intended defence date. The Thesis Defence Planning form serves to:

- notify the Graduate Coordinator when the student is ready to defend;
- provide administration with the names of three potential External Examiners; and
- provide the Graduate Coordinator with all relevant information regarding the proposed date of the defence, and the availability of supervisory committee members.

Examination Format

The thesis shall be defended orally before the Thesis Examining Committee and any other interested persons who choose to attend. A public announcement of the examination shall normally be posted at least two weeks before the event. A defence consists of a 10- to 20-minute survey by the candidate of the scope of the problem and main achievements in the research. This is followed by questions and comments from the external examiner and the student's response. After the members of the Thesis Examining Committee and the audience have questioned the candidate, the Thesis Examining Committee deliberates in camera, basing the decision on both the quality of the thesis and the candidate's ability to defend it.

Examination Results

The outcome is decided by consensus of members of the Thesis Examining Committee present. Theses are either approved or not approved. The categories are:

- Approved as submitted
- Approved upon specific corrections being made. A clear timetable for completion of the revisions must be presented to the student, normally with a maximum of one month to complete the revisions. The supervisor is usually asked to monitor the required changes. Usually at least two members of the Examining Committee read the revised thesis to provide final approval.
- Rejected but with permission to re-submit a revised thesis for re-examination. A clear timetable for completion must be presented, normally with a maximum of one year to resubmit. Major revisions may be on grounds of form as well as content. When resubmitted, the thesis will be re-read by an examining committee, containing at least two members from the original Thesis Examining Committee. The thesis shall be sent to an external examiner who may be the original external examiner if the Chair of the examination considers this desirable. The revised thesis shall be defended in the usual way.
- Rejected outright. The rejection may be on grounds of form as well as content. The candidate or supervisor may appeal this decision to the Chair of the examination in writing within five working days of the decision. If the Chair deems the evidence to be sufficiently strong, the Chair of the examination shall initiate the procedure for a re-examination. No more than one appeal may be entertained and the examination Chair's decision shall be final. In all cases, all members of the Examining Committee must submit written examination reports, dated and signed, which shall become part of the candidate's file. The Chair's written report shall summarize the outcome of the examination process, the final decision, and any conditions attached. In the case of an outright failure or failure with a right to submit by a specific date, the Graduate Coordinator must send a written notification of failure to FGS.

Presentation of Thesis for Graduation

Deadlines

Students are responsible for presenting to FGS one copy of the corrected and approved thesis for a formal check at least one week before the deadline date for submission of approved theses to FGS (the deadline date is published annually in the Dalhousie University Graduate Studies Calendar and the NSAC Graduate Program Procedures Manual). Following a format approval by the FGS, students are responsible for presenting to the FGS six unbound copies of the corrected and approved thesis. Only good quality photocopies or printed copies will be accepted. In addition, each student is to present a corrected and approved copy of the thesis to the Research & Graduate Studies Office.

Binding and Distribution

NSAC students must submit six copies (original plus five copies) of the approved unbound thesis to FGS. The Dalhousie Faculty of Graduate Studies will arrange for binding of the six copies of the thesis and its subsequent distribution as follows:

- one copy to the author
- one copy to the student's supervisor
- one copy to the student's department
- one copy to the NSAC Library
- one copy to the Dalhousie University Library
- one copy to the National Library of Canada

The Dalhousie University Library arranges for the production of a microform copy to be retained in the National Library, Ottawa, and listed in Dissertation Abstracts International or Masters

Abstracts International. The National Library can then circulate such copy according to the International Inter-Library Loan Code, with full copyright protection; it also guarantees a permanent record of the thesis. The Dalhousie University Library retains one bound copy in the University Archives.

At the time of submitting the unbound, approved thesis (original and five copies) to the FGS office, the student will present a cheque for \$* payable to the Faculty of Graduate Studies Office, Dalhousie University. This sum will cover the cost of binding. The cost of binding each additional copy of the thesis is \$*. An additional charge will be made (where appropriate) to cover mailing costs.

*Binding cost is subject to change without notice.

Convocation

Graduate students have the option of attending convocation ceremonies at either NSAC or Dalhousie University. Convocation ceremonies are held at NSAC in May and at Dalhousie University in May and October. Students must fulfill all requirements including the payment of all fees prior to graduation. Applications to graduate are available at the Research & Graduate Studies Office and must be submitted to the Graduate Coordinator by July 1 to graduate in October and by November 15 to graduate the following May.

Any graduating student who is unable to appear at convocation is expected to notify the Graduate Coordinator in writing prior to April 15 for Spring convocation (or October 1 for Fall convocation at Dalhousie University). Students whose accounts are delinquent on April 15 will not receive their degree parchment or their transcripts. For October graduation the date is September 1.

When a student has fulfilled all the requirements for the degree (including payment of all program fee requirements and any continuing fees) in advance of the official graduation date, a letter to that effect can be obtained from the Faculty of Graduate Studies Office, Dalhousie University. The Confirmation Letter Request form is located on the FGS website under "Forms and Documents of Students".

Graduate Curriculum Listing

Graduate Courses

Graduate courses are intended for students registered in the M.Sc. program and may be taken by undergraduate students only under exceptional circumstances.

Required Regular Courses

These courses are restricted to graduate students.

AGRI5700: Communication Skills and Graduate Seminar

AGRI9000: Graduate Thesis

Recommended Regular Courses

Where an undergraduate student wishes to take one of these graduate courses, the following signatures are required for approval: the instructor(s), the relevant Department Head(s), and the Graduate Coordinator.

AGRI5710: Module Course

AGRI5720: Applied Statistics and Experimental Design for Agriculture (The prerequisite for this course is AGRI5630 or STAT4000.)

Other Regular Courses

Where an undergraduate student wishes to take one of these graduate courses, signatures of the following are required for approval: the instructor(s), the relevant Department Head(s), and the Graduate Coordinator.

AGRI5270: Economic Entomology

AGRI5350: Animal Research Methods

AGRI5360: Protein Nutrition

AGRI5380: Quantitative Genetics

AGRI5390: Molecular Genetic Analysis of Populations

AGRI5440: Organic Environmental Analysis

AGRI5520: Plant Breeding Methods

AGRI5530: Nitrogen in Crop Production

AGRI5560: Advanced Crop Physiology

AGRI5705: Module Course II

AGRI5740: Advanced Studies in Food Chemistry

Special Topics Courses

Special Topics courses may be taken by undergraduate students only under exceptional circumstances. The following signatures are required for approval: the instructor(s), the relevant Department Head(s), and the Graduate Coordinator.

AGRI5210: Special Topics in Environmental Microbiology

AGRI5220: Special Topics in Weed Science

AGRI5240: Special Topics in Environmental Impact

AGRI5260: Special Topics in Plant Pathology

AGRI5310: Special Topics in Applied Ethology

AGRI5320: Special Topics in Animal Nutrition

AGRI5340: Special Topics in Animal Physiology

AGRI5370: Special Topics in Animal Breeding and Genetics

AGRI5410: Special Topics in Soil Fertility

AGRI5430: Special Topics in Environmental Analysis

AGRI5460: Special Topics in Soil and Water Management

AGRI5470: Special Topics in Analytical Instrumentation for Researchers

AGRI5510: Special Topics in Plant Breeding

AGRI5540: Special Topics in Crop Physiology

AGRI5570: Special Topics in Agricultural Biotechnology

AGRI5610: Special Topics in Animal Product Technology

Cross-referenced Courses

Cross-references with undergraduate courses are shown in brackets ().

AGRI5250: Soil Microbiology (MICR4000)

AGRI5450: Environmental Soil Chemistry (SOIL4000)

AGRI5620: Ruminant Digestive Physiology and Metabolism (NUTR4000)

AGRI5630: Intermediate Statistical Methods (STAT4000)

Graduate Course Descriptions

AGRI5210 (AG521): Special Topics in Environmental Microbiology

Instructor: Prof. Stratton

This course will allow students to study a particular topic in the field of environmental microbiology in more depth than would be practical in a general course. The student will choose a topic in consultation with the instructor. An in-depth literature search will be required, and the material gathered will be discussed in weekly tutorial sessions. Laboratory work will be

conducted when required and if appropriate to the topic chosen. Topics for study can be of either a theoretical or applied nature, with the needs of the student being a primary factor in finalizing the topic.

Fall semester – to be arranged with the instructor.

AGRI5220 (AG522): Special Topics in Weed Science

Instructor: Prof. Sampson

Topics might include: evolution of weeds, impact of weeds on human history, weed ecology and physiology, crop/weed interactions, herbicide chemistry, physiological and biochemical behaviour of herbicides in plants, environmental fate of herbicides, mycoherbicides, and biorationals. Two term projects and a research critique will be required.

Winter semester – to be arranged with the instructor.

AGRI5240 (AG524): Special Topics in Environmental Impact

Instructor: Prof. Stratton

This course will allow students to study a particular topic in the field of environmental impact or environmental toxicology in more depth than would be practical in a general course. The student will choose a topic for study in consultation with the instructor. An in-depth literature search will be required, and the material gathered will be discussed in weekly tutorial sessions. Laboratory work will be conducted when required and if appropriate to the topic chosen. Topics for study should be related to the student's area of research or interests.

Winter semester – to be arranged with the instructor.

AGRI5250 (AG525): Soil Microbiology cross-referenced as MICR4000

Instructor: Prof. Stratton

This course is designed to provide an intensive study of the microbiology of soils and will emphasize nutrient cycling and biodegradation. Topics covered include the relationships between the abiotic and biotic components of soils, the microbial biochemistry of the carbon, nitrogen, sulphur, phosphorus, and selected micronutrient cycles, heavy metal cycling, and the microbial degradation of industrial wastes and pesticides. The laboratory classes will concentrate on techniques to monitor the microbial biomass in soil and the microbial components of nutrient cycles. These include new advances in bacterial taxonomy and identification and the use of gas chromatography and high-performance liquid chromatography in quantitating nutrient cycling. In addition to a major term paper, a comprehensive laboratory report on the entire term's lab work, and a single take-home examination, graduate students will be required to:

- modify the term paper into a critical review of some aspect of soil microbiology (chosen in consultation with the instructor); the review must be current and in depth; it must be written in manuscript format and will be graded accordingly;
- perform additional laboratory exercises not assigned to undergraduate students; use more replicates; perform a full statistical analysis of data; provide a report in manuscript format;
- give a seminar to the class on their term paper topic.

Fall semester – to be arranged with the instructor.

Offered in alternate years; next offered in 2006/2007.

AGRI5260 (AG526): Special Topics in Plant Pathology

Instructors: Profs. Gray and Singh

This course will be custom-designed to meet the specific needs of graduate students specializing in the area of plant pathology who need further specific knowledge and/or skills.

Fall or Winter semester – to be arranged with the instructor.

AGRI5270 (AG527): Economic Entomology

Instructor: Prof. Le Blanc

Insect pest management in agriculture with emphasis on a selection of non-chemical approaches to insect control, e.g., natural, mechanical, physical, cultural, biological, biochemical, and/or legal control. According to the student's interest, a section on chemical control can be included. This course is consistently in accord with the theory and principles of integrated pest management (IPM) and consequently, the term assignments will incorporate the study of sampling techniques and monitoring methods of insect pests and related beneficial arthropods. Attendance at certain relevant seminars may be required and directed readings may be assigned.

A case history of a major agricultural insect pest will be prepared to satisfy the course requirement. The material will be submitted in term paper format and also delivered in an oral presentation. The case history will include the life cycle, host plants, pest status, damage, losses, control measures, research needs, and IPM programs pertinent to the particular species.
Winter semester – 2 lecs and 1 tutorial per week.

AGRI5310 (AG531): Special Topics in Applied Ethology

Instructor: Prof. Tennessen

Course content will vary. Topics covered will be chosen so as to meet the requirements of individual graduate students. Aspects could include the assessment of farm animal welfare, foraging behaviour, environmental enrichment, social dynamics of livestock, and early rearing environment and the effect on later behaviour.

Fall or Winter semester – to be arranged with the instructor.

AGRI5320 (AG532): Special Topics in Animal Nutrition

Instructors: Profs. Anderson and Fredeen

The course is designed to provide an opportunity to study specific aspects of animal nutrition. Aspects could include study of a particular nutrient, a process in nutrition, a nutritional state, or nutrient metabolism of a specific species with focus on the research method. Students are advised to consult with their supervisors to determine the specific scope of the topic to be studied.

Fall or Winter semester – to be arranged with the instructor.

AGRI5340 (AG534): Special Topics in Animal Physiology

Instructor: Prof. MacLaren

This course is for students with a major interest in animal physiology. The course will consist of discussions, term papers, and presentations. Students will be expected to nominate topics for consideration and to prepare major reviews and class presentations of selected topics.

Fall or Winter semester – to be arranged with the instructor.

AGRI5350 (AG535): Animal Research Methods

Instructors: Dept. of Plant and Animal Sciences Faculty

This course is designed for students who are, or expect to be, working in Animal Science, or who have an interest in the methodology and ethics of animal research. The course will include consideration of some of the common or promising laboratory and field methods associated with domestic animal research, ethics of animal research, and the analysis, interpretation, and reporting of results. Students will be expected to participate in exercises, to contribute to discussions, and to present reviews on various aspects.

Fall semester – to be arranged with the instructor.

AGRI5360 (AG536): Protein Nutrition

Instructor: Prof. Anderson

A study of the sources, availability, and metabolism of protein and amino acids for the domestic animal. Subjects addressed include sources of protein, factors affecting digestibility of protein, digestion and absorption of protein and nitrogen, urea recycling, individual amino acid metabolism, excretion of nitrogenous wastes in birds and mammals, and protein and amino acid requirements of animals.

Winter semester – to be arranged with the instructor.

Offered in alternate years; next offered in 2006/2007.

AGRI5370 (AG537): Special Topics in Animal Breeding and Genetics

Instructors: Dept. of Plant and Animal Sciences Faculty

Provides students with an opportunity to pursue more detailed studies in Animal Breeding/Genetics. Topics will be decided on by the student in consultation with faculty members for the purpose of meeting the student's specific needs as defined by the thesis research. Delivery will be a combination of directed reading and tutorial discussions.

Fall or Winter semester – to be arranged with the instructor.

AGRI5380 (AG538): Quantitative Genetics

Instructor: Prof. Patterson

An introduction to quantitative genetics theory and to statistical techniques used in domestic animal improvement. Computing and statistical techniques will be demonstrated and presented, and relevant literature will be surveyed. Reference will be made throughout to performance recording programs used in Canada and throughout the world.

Winter semester – to be arranged with the instructor.

AGRI5390 (AG539): Molecular Genetic Analysis of Populations

Instructor: Prof. Farid

This course is designed to give graduate students some understanding of the theoretical aspects of population and molecular genetics. Various DNA fingerprinting techniques, such as minisatellites, microsatellites, RAPD-PCR, FRLP-PCR and SSCP-PCR, and their applications in population genetic studies will be discussed. Students will acquire hands-on experience with some of these techniques. Analysis of molecular data to estimate intrapopulation parameters (heterozygosity, Hardy-Weinberg equilibrium) and interpopulation parameters (test of heterogeneity of allele frequency distributions, genetic distances, phylogenetic analysis, bootstrapping, F-statistics) will be covered.

Fall or Winter semester – to be arranged with the instructor.

AGRI5410 (AG541): Special Topics in Soil Fertility

Instructor: Prof. Percival

The course is designed to provide an opportunity to study specific aspects of soil fertility. Topics may include the influence of soil biological, chemical, and physical properties and processes on nutrient absorption and plant growth, with emphasis on essential plant nutrients in the soil and methods for evaluation, as well as the use of inorganic and organic amendments.

Winter semester – to be arranged with the instructor.

AGRI5430 (AG543): Special Topics in Environmental Analysis

Instructor: Prof. Hoyle

Students may apply to undertake either a specially designed course in environmental analysis, or to undertake additional work further to Organic Environmental Analysis. This may be facilitated with written consent from the instructor who then assumes personal responsibility for supervising the work.

Fall or Winter semester – to be arranged with the instructor.

AGRI5440 (AG544): Organic Environmental Analysis

Instructor: Prof. Hoyle

This course has limited enrolment.

The course will involve the study of the analytical chemical techniques used in the analysis of environmental samples obtained from the atmosphere, hydrosphere, and lithosphere. Included in this study will be the sampling methods used for air, water, soil, food, and wastes, and modelling of environmental contamination. In addition, government regulations, hazard assessment, and public awareness of these issues will be discussed. In addition to successfully completing examinations, graduate students will be required to:

- write a major paper on an important topical issue;
- present that paper as a seminar before departmental faculty, staff, and students; and
- write a research proposal prior to starting the laboratory project.

Fall semester – to be arranged with the instructor.

Offered in alternate years; next offered in 2006/2007.

AGRI5450 (AG545): Environmental Soil Chemistry

cross-referenced as SOIL4000

Instructor: TBA

The course is designed to provide an opportunity to study specific aspects of environmental soil chemistry. Topics may include the chemical composition of soils with special attention to soil biochemistry and soil organic matter with an emphasis on organic matter–clay interactions, soil organic N, P and S, and soil enzymology. Graduate students will be expected to participate in lecture/discussion sessions and complete required reading assignments. In addition, graduate students will be required to complete research papers and present their findings at in-class seminars.

Winter semester – to be arranged with the instructor.

Offered in alternate years; next offered in 2006/2007.

AGRI5460 (AG546): Special Topics in Soil and Water Management

Instructors: Profs. Havard, Madani, and Gordon

This course will discuss the state-of-the-art soil and water management practices in either humid or arid regions, depending on the specific needs of the graduate students. Topics may include: fundamentals of soil and water properties; drainage and water table control; management of farm irrigation and draining systems; salinity control; irrigation water requirements; drainage requirements for humid and arid regions; soil conservation; and computer modelling of irrigation and drainage systems. Guest speakers will be invited to share their experiences with the students.

Fall or winter semester – to be arranged with the instructors.

AGRI5470 (AG547): Special Topics in Analytical Instrumentation for Researchers

Instructors: Profs. Crowe, Hoyle, and Stratton

This course is designed to meet the needs of graduate students who are using analytical instruments in their research. The course will provide the graduate student with specific theoretical knowledge and the necessary practical skills required to properly use these instruments. The student will select either one of the following areas for detailed consideration, or two to three of the following areas for a more general coverage: gas chromatography, liquid chromatography, atomic analysis, DNA or protein electrophoresis, infrared or fluorometric analysis, NMR, mass spectrophotometry, and microscopy.

Fall or Winter semester – to be arranged with the instructors.

AGRI5510 (AG551): Special Topics in Plant Breeding

Instructors: Dept. of Plant and Animal Sciences Faculty

This course is designed to meet the specific needs of graduate students specializing in the area of Plant Breeding who need further specific knowledge and/or skills.
Fall or Winter semester – to be arranged with the instructor.

AGRI5520 (AG552): Plant Breeding Methods

Instructors: Dept. of Plant and Animal Sciences Faculty

Genetic and statistical principles underlying modern plant breeding methods are introduced. Those principles will be reinforced through the use of computer models. Cultivar development techniques for self- and cross-pollinated species are examined in detail. Applications of tissue culture, genetic engineering, and marker-facilitated selection are discussed. This course is open to students who have had introductory courses in genetics, plant breeding, statistics, and molecular biology.

Fall semester – to be arranged with the instructor.

AGRI5530 (AG553): Nitrogen in Crop Production

Instructor: Prof. Martin

Students will study the transformations of N in air, soil, water, and plants, and consider crop requirements for N. Topics include the chemistry of N, the N cycle, N transformations in soil, N metabolism in plants, N transport in plants, N-fixation, N losses in agricultural systems, and an evaluation of N fertilizer in these systems.

Fall semester – to be arranged with the instructor.

Offered in alternate years; next offered in 2006/2007.

AGRI5540 (AG554): Special Topics in Crop Physiology (A)

Instructors: Profs. Caldwell, Asiedu, Goodyear, and41 Martin

This course is designed to meet the specific needs of graduate students specializing in the area of Crop Physiology who need further specific knowledge and/or skills.

Fall or Winter semester – to be arranged with the instructors.

AGRI5560 (AG556): Advanced Crop Physiology

Instructor: Prof. Caldwell

Physiological processes relevant to crop plant development and production of harvestable yield will be examined.

Fall or Winter semester – to be arranged with the instructor.

Offered in alternate years; next offered in 2005/2006.

AGRI5570 (AG557): Special Topics in Agricultural Biotechnology

Instructor: Prof. MacLaren

This course is designed to meet the specific needs of graduate students specializing in the area of Agricultural Biotechnology who need further specific knowledge and/or skills.

Fall or Winter semester – to be arranged with the instructor.

AGRI5580 (AG558): Plant Biotechnology I

Instructor: Prof. Wang-Pruski

This course has limited enrolment.

Theoretical bases of plant tissue culture, overview of the organization and operation of a tissue culture laboratory and tissue culture techniques and their application to nuclear seed potato production, multiplication of horticultural crops and landscape plant material, production of secondary metabolites, germplasm development and plant breeding and conservation of genetic resources. Outline of the techniques of manipulation of plant genome will also be a part of this course. Students must complete an assigned project.

Winter semester – 2 lecs and 4 labs per week.

Offered in alternate years; next offered in 2005/2006.

AGRI5610 (AG561): Special Topics in Animal Product Technology

Instructors: Dept. of Plant and Animal Sciences Faculty

This course will review areas important in the technology of foods derived from animals (meat, fish, eggs, milk). Such areas could include chemistry (lipid oxidation, Maillard reactions), physics (changes caused by freezing, sol-gel conversion, colour) and microbiology (spoilage, pathogenic organisms, modified-atmosphere packaging, HACCP). Each student will be expected to present a review of a particular topic.

Fall semester – to be arranged with the instructor.

AGRI5620 (AG562): Ruminant Digestive Physiology and Metabolism

cross-referenced as NUTR4000

Instructor: Prof. Fredeen

Prerequisites: NUTR3000, CHEM3006

This course is designed to provide an intensive study of food intake and digestion, and nutrient absorption and metabolism, in the ruminant animal. The course details current knowledge and focuses on aspects of future research interest. Students are expected to contribute to discussions and present reviews to the class on various aspects of the subject.

Fall semester – 3 lecs and 2 labs per week.

Offered in alternate years; next offered in 2006/2007.

AGRI5630 (AG563): Intermediate Statistical Methods

cross-referenced as STAT4000

Instructor: Prof. Astatkie

Prerequisite: STAT3000, or permission of the instructor

Analysis of single-factor experiments, randomized blocks, latin squares, and factorial and two-level fractional factorial designs.

Fall semester – 3 lecs and 1 computer lab per week.

AGRI5700 (AG570): Communication Skills and Graduate Seminar

Instructors: TBA

Through practical assignment, students will be able to test and develop their communication skills. Topics will include review, criticism, and writing of journal papers, grant applications, posters, seminars, lectures, and interviews. This course is required for students enrolled in the M.Sc. in Agriculture program.

Fall and Winter semesters – 1 lec per week.

AGRI5705 (AG573): Module Course II

Coordinator: Prof. Caldwell

Prerequisite: AGRI5710

This course normally consists of three modules. Each module consists of one month of lectures or assignments dealing with a topic in the lecturer's area of expertise. Research interests of incoming students are taken into account each year when module topics are solicited. Students should not apply to take a module unless they have at least a second-year undergraduate background in the focus area. A formal evaluation is made at the end of each module.

Fall/Winter semester: Students registering for the module course in September must complete three modules between September and April (8 months).

Winter/Summer semester: Students registering for the module course in January must complete three modules between January and August (8 months).

AGRI5710 (AG571): Module Course I

Coordinator: Prof. Caldwell

This course normally consists of three modules. Each module consists of one month of lectures or assignments dealing with a topic in the lecturer's area of expertise. Research interests of incoming students are taken into account each year when module topics are solicited. Students should not apply to take a module unless they have at least a second-year undergraduate background in the focus area. A formal evaluation is made at the end of each module.

Fall/Winter semester: Students registering for the module course in September must complete three modules between September and April (8 months).

Winter/Summer semester: Students registering for the module course in January must complete three modules between January and August (8 months).

AGRI5720 (AG572): Applied Statistics and Experimental Design

Instructor: Prof. Astatkie

Prerequisite: STAT4000, or equivalent

This course is designed to provide practical skills in statistical methods and experimental designs, and an appreciation of situations when more complex models and methods are required. Topics include linear and nonlinear regression, split-plot designs, repeated measures, and response surface methods. Students will be expected to successfully complete practical exercises and a project involving real experimental problems and data sets. Students will also be expected to acquire proficiency in at least one advanced statistical software package.

Winter semester – 3 lecs per week.

AGRI5740 (AG574): Advanced Studies in Food Chemistry

Instructor: Prof. Crowe

Prerequisite: one undergraduate food science course or equivalent

This course is designed to allow graduate students to explore in detail various aspects of the chemical nature of agri-food products. This may include but is not limited to a study of naturally occurring components (functional foods and nutraceuticals), nutritional changes during value-added processing and product formulation. The exact focus of the course will depend on the expressed interest of students in the course.

Fall or Winter semester, to be arranged with the instructor – 1 lec and 1 discussion per week.

AGRI9000 (AG900): Graduate Thesis

Students register for this course when they are engaged in research work for credit towards the M.Sc. in Agriculture degree.

Fall and Winter – for duration of program.

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Scholarships, Bursaries and Academic Prizes

Specific inquiries regarding scholarships and bursaries should be directed to the college's Awards Office located in the Lower Level of the Student Services Centre, 11 River Road on

campus or by phone at (902) 893-6729 (902) 893-6729 FREE , by fax (902) 895-4547, or by e-mail at bcrouse@nsac.ns.ca.

The college's Scholarship Committee reserves the right to authorize changes at any time to the selection criteria and awarding of scholarships, bursaries, and prizes.

Definition of Terms

Award

An award is a general term used to mean any presentation made to a student.

Governor General Medal

The Governor General Medals are awarded to the students with the highest academic standing graduating each year in the Technical, Bachelor's (B.Sc.(Agr.) and B.Tech) and M.Sc. programs.

Scholarship

A scholarship is an award to a student based primarily on academic performance, although other criteria may be considered based on the donors' requirements.

Bursary

A bursary is a monetary award to a student where the primary criterion is not academic performance.

Prize/Gift

A prize or gift is an award given to a student based on the selection of the donor.

- **Note:** In the descriptions of the various scholarships, bursaries, and prizes that follow where the selection criteria are not specified, the guidelines above apply. The following guidelines determine year of study in the B.Sc.(Agr.) program:
 - 7 Credits = 2nd year
 - 18 Credits = 3rd year
 - 28 Credits = 4th year
- **Note:** Selection of scholarship and bursary winners is primarily based on the work of the previous year, with consideration also given to the cumulative average of the work done at NSAC. Generally students must be enrolled on a full-time basis to be considered for scholarship and bursary selection; preference will usually be given to students completing 8 courses per year with no fewer than 3 courses per semester.
- **Publicity Disclaimer:** It is the policy of the NSAC to publish the names, home town, photo and under some circumstances the addresses of recipients of scholarships, prizes, awards and bursaries. Those students who do not wish this information published must notify the Awards Office at the time of their acceptance of the award..
- **Scholarship Selection:** Scholarship selections are made by NSAC, the NSAC Scholarship Committee, or Donors or their Administrators.

Procedure for Appeals to Scholarship Renewal Decisions

Students may appeal scholarship renewal decisions based on extenuating circumstances. Generally, reasons must be severe and of a documentable nature. Appeals will generally be considered from students who have the following grounds for appeal:

- medically documented/supported personal illness or psychological/physical trauma.
- documented/supported traumatic circumstances in immediate family such as death or serious illness.

Other grounds may be considered at the discretion of the Scholarship Committee.

Students must submit a letter in writing to the Chair of the Scholarship Committee requesting a review of a scholarship renewal decision. The letter should clearly demonstrate the extenuating circumstances. Documentation supporting any claims must also be included. All information contained in the letter will be kept confidential within the Committee. Students will be informed of the Committee's decision by letter. All decisions of the committee are final.

Scholarship Renewal Criteria

1. Renewable scholarships are renewed automatically at their initial value provided the student has maintained an average of 80% or greater (unless otherwise specified) for every year of study for which the scholarship was renewable. Renewable scholarships are renewed annually on a continuous basis, based on the work of the previous year (once forfeited cannot be re-instated).
2. Scholarships are renewed based on an 80% average for the full year of study (80% is not required in each semester). A year of study is normally defined as September 1 to August 31; students who do not follow the normal year of study will be considered by the Scholarship Committee on an individual basis.
3. To be eligible for scholarship renewal, students must maintain registration in at least 80% of the number of courses for the normal course load per semester for both the previous and the current year.
4. For scholarship purposes, averages are calculated to the nearest whole number (if an average falls exactly between two whole numbers, the average is rounded up).
5. The average is determined by all marks earned by the student in the previous year; non-credit courses (CHEM0050, MATH0050 and PHYS0050) are included in the calculation of the year's average for degree students.
6. To be eligible for scholarship renewal, a student may not have any failed courses (including Drop Fails).
7. A student who does not satisfy all the above criteria due to medical or other extenuating circumstances may appeal in writing to the Awards Office.

* The above criteria generally apply to all renewable scholarships (e.g. NS Department of Agriculture and Fisheries, Harrison McCain Scholarships, NSAC Entrance Scholarships for CEC Students, Atlantic Scholars Awards, NS Power, Isgonish IODE).

Staggered Application Deadlines

To help with the processing of applications received this year, we are implementing a schedule for various scholarships/bursaries/awards that require applications. Please note application deadlines can be September 20, September 23, September 30, or October 5. These dates are indicated in the award descriptions. To be sure you don't miss out on application deadlines, please note application deadline dates for awards you are applying to.

Application Selection Process

When applying for scholarships, bursaries or awards at NSAC please note that the selection review is not a quick process. In most cases applications must be reviewed by the NSAC Scholarship Committee from mid-September to mid-October. The complete list of winners will be posted one week prior to Autumn Assembly. Awards won through the Autumn Assembly selection process are credited to student accounts in January, unless special written requests are made. Students should budget accordingly.

I. Entrance Scholarships and Bursaries

The following scholarships and bursaries are available exclusively to students entering undergraduate or technical study at the Nova Scotia Agricultural College.

	2005	Nova Scotia Agricultural College Entrance Scholarships at a Glance
	\$ 34,000*	Five renewable scholarships (full tuition and residence at shared-room rate) to top students from Atlantic Canada with minimum average of 85% on required courses.
Atlantic Scholars Awards		Application deadline is March 15, 2005.
(\$8,500 per year)		*Value of scholarships dependent on number of courses taken and whether residence portion is accepted. (Values given are based on 2004/2005 fees.)
(Estimate of potential total value based on projected costs of a 4 year program)		
	\$13,500	Two Harrison McCain Scholarships are awarded to Canadian students entering first year of any program with minimum 80% average. Selected based on academic performance, financial need, recognized initiative in funding own education, and leadership qualities.
(Over four years)		Application deadline March 23, 2005.
	\$2,500	Scholarships to all students admitted with averages in required courses of 90% or greater.** No application required.
	\$1,500	Scholarships to all students admitted with averages in required courses between 85% and 89%.** No application required.
	\$1,000	Scholarships to all students admitted with averages in required courses between 80% and 84%.** No application required.
Other Scholarships Ranging in Value from \$500 to \$2,000		Both application-based and non-application-based scholarships with various application deadlines are selected and awarded in the fall. See details on the various entrance scholarships on the following pages.
		Guaranteed Entrance Scholarships to NSAC
		All Canadian students with averages of 80% or greater will receive an entrance scholarship from NSAC. Scholarships are awarded based on the high school averages of the courses required for admission, calculated to the nearest whole number.

For Entrance Scholarship purposes the determining average is based on either:

1. the average of the courses required for admission to the respective program of study from first term or final Grade 12 marks, or
2. the average of the final marks of the courses required for admission from first semester Grade 12 and the final marks of the remaining required courses from Grade 11.

Guaranteed Entrance Scholarship Eligibility:

- for high school students only
- must be entering full-time study
- automatic consideration
- no application is required
- tenable for one year
- students entering the first year of study in any undergraduate or technical program, with the following exception: students receiving Atlantic Scholars Awards or NSAC/CEC Entrance Scholarships.

Notes: For scholarship purposes, averages are calculated to the nearest whole number (if an average falls exactly between two whole numbers, the average is rounded up). Scholarships are awarded in two installments; to receive the second installment, full-time study must be maintained.

Atlantic Scholars Awards

NSAC annually awards five renewable entrance scholarships to students entering a full-time program of study either directly from high school or with no advanced standing from other postsecondary study. Atlantic Scholars Awards will provide tuition (for the respective program of study) and residence costs (at shared-room rate, for as long as the recipient chooses to live in residence). The scholarship does not cover meals, books and student fees. In order to qualify for the value of the shared-room portion of room and board fees, the recipient must reside in residence for the full academic year, each year the scholarship is held. Students entering either technical or degree programs at the college are eligible. Only those applicants who have achieved a minimum average of 85% on the courses required for admission shall be considered. Selection criteria include academic performance (on courses required for admission), geographic distribution (in most years at least one student from each of the Atlantic Provinces will be awarded a scholarship), extracurricular activity, and a recommendation from an official representative (e.g. Guidance Counsellor) of the high school or other previously attended postsecondary educational institution. The Atlantic Scholars Awards are tenable for a maximum of four years. These scholarships are renewed by maintaining an annual average of 85%. See information on page 3 on criteria for renewable scholarships for additional renewal criteria. Recipients of Atlantic Scholars Awards are not eligible to receive other guaranteed entrance scholarships. Recipients of renewed Atlantic Scholars Awards are also not eligible for internally selected In-Program scholarships. The Atlantic Scholars Awards are valued at approximately \$8,500 for the first year and have a potential total value over four years of \$34,000. The actual value is dependent on the number of courses taken and whether the residence portion is accepted. Applications must be submitted to NSAC Awards Office not later than March 15, 2005.

Atlantic Canada Bursaries

NSAC has established a fund which will provide \$1,000 bursaries to assist students in need of financial assistance. To be eligible students must be in good standing, will have spent at least

one term in full-time study at NSAC, and must be registered on a full-time basis for both semesters for the full academic year. Applications will be reviewed December 9, 2005.

Doug Bailey Memorial Bursary

Farmers Dairy awards a \$2,000 bursary to a student in any year of any program at NSAC who is a family member of a Farmers Dairy shareholder or employee. The bursary is named in memory of Doug Bailey, a former President and CEO. Selection criteria include leadership, extracurricular and community activities, financial need, and a sound academic record. Applications must be submitted to the NSAC Awards Office no later than October 5.

Bible Hill Garden Club Bursary

The \$250 Bible Hill Garden Club Bursary is awarded to an NSAC student from the Truro area. Preference is given to students in at least the second year of study in Horticulture (preferably Environmental Horticulture), academic performance, and financial need. Applications must be submitted to the NSAC Awards Office by September 23.

Canadian Association of Agri-Retailers Bursary

The \$1,000 Canadian Association of Agri-Retailers Bursary is awarded annually to an NSAC student in any year of any program whose course work, summer employment, home background and career plans reflect an interest in Agronomy and the Crop Input industry. Selection criteria will include interest and involvement in Agronomy/field crops and the crop input industry, and financial need. Applications must be submitted to the NSAC Awards office not later than September 20.

Canard Conservation Undergraduate Scholarship

The \$500 Canard Conservation Undergraduate Scholarship is awarded to a first- or second-year B.Sc.(Agr.) student from Kings County, NS, who is planning course and/or project work related to the environment. Selection criteria include: academic performance, demonstrated interest in the environment, and career plans. Applications must be submitted to the NSAC Awards Office not later than May 15.

Chicken Producers of Nova Scotia Bursary

The \$1,000 Chicken Producers of Nova Scotia bursary is awarded to an NS student at NSAC who shows a demonstrated interest in pursuing the study of poultry. Preference will be given to applicants with a farming background. Students in all years of study are eligible. A student may not receive this scholarship more than once. Applications must be submitted to the NSAC Awards Office not later than September 20.

George & Lottie Cook Memorial Scholarship

The \$500 George and Lottie Cook Memorial Scholarship is awarded annually to an NS student enrolled in the first or second year of any program of study at NSAC. Selection criteria include academic performance and financial need. Applications must be submitted to the NSAC Awards Office not later than September 20.

Co-op Atlantic Bursaries

Three \$500 Co-op Atlantic bursaries are awarded to students entering the technical program. Selection is based on financial need, potential for community leadership and/or co-operative endeavour, and the recommendation of a local co-operative or district Federation of Agriculture. These bursaries are renewable for a second year when the recipient forwards to the donor first-year marks and confirmation of enrollment. Applications must be submitted to the NSAC Awards Office not later than September 30.

Dykeview Farms Ltd. Scholarship

Dykeview Farms Ltd. offers a \$1,000 scholarship open to students from Northeast Kings Education Centre. Selection is based on financial need, community involvement, and academic performance. Application deadline is May 2, 2005. Contact NEKEC Guidance Office or NSAC Awards Office for application instructions.

Great Village Garden Club Bursary

The \$250 Great Village Garden Club Bursary is awarded to a student in any year of any program who has not qualified for other scholarships or awards. No application is necessary.

Kings County Federation of Agriculture Bursary

The \$500 Kings County Federation of Agriculture Bursary is awarded to a resident of Kings County, NS, entering the first year of full-time study at NSAC. Selection criteria include financial need, academic performance, and contribution to and participation in the agricultural industry of Kings County. The selection will be made by the donor. Applications are available from and must be received by May 30 at: Kings County Federation of Agriculture, Box 14, Kentville, NS B4N 3V9

Kings Mutual Insurance Scholarship

In memory of Past Directors, The Kings Mutual Insurance Company awards three \$1,000 scholarships to NS students, in any year of any program of study, at NSAC. At least one of the scholarships annually will be available to a student in a Technical program of study. Selection criteria include: financial need, academic performance, and demonstrated interest in a career in the agri-food industry as reflected by summer employment and/or extracurricular involvement. This scholarship is not available to students receiving other scholarships totalling \$1,000 or more. Applications must be submitted to the NSAC Awards Office not later than October 5.

Harrison McCain Scholarship

Valued at \$13,500 over four years (\$5,000 in year one, \$3,500 in year two and \$2,500 in years three and four), two Harrison McCain Scholarships will be awarded to two students entering the first year of any program of study at NSAC. This scholarship is open to Canadian high school graduates who are maintaining an 80% average in their senior year of high school. Selection is based on academic performance, financial need, recognized initiative in funding own education, and leadership qualities. The scholarship is renewed based on the recipient maintaining full-time study and carrying an academic average of 60% in year one, 70% in year two, and 75% in year three. The Harrison McCain Scholarship is tenable at NSAC for a maximum of four years of study and is not transferable. Recipients of the Harrison McCain Scholarship may also accept other scholarships, bursaries and awards but not to exceed a total of \$7,500 in year one and a total of \$6,700 in each of the following three years of study. Applications are due at the NSAC Awards Office no later than March 23, 2005.

Newfoundland and Labrador Federation of Agriculture Scholarships

To encourage local students to pursue careers in the Agri-products industry, the Newfoundland and Labrador Federation of Agriculture awards two \$1,000 scholarships to NL students (preferably one from the East Coast and one from the West Coast) entering studies at NSAC. Selection criteria include academic performance and financial need. Applications must be submitted to the NSAC Awards Office not later than September 20.

Newfoundland and Labrador Provincial Scholarships

The Newfoundland and Labrador government, through its Department of Education, awards three scholarships of \$1,000 each to NL students entering a degree program at NSAC. Selection will be based on academic performance. No application is required.

NSAC Entrance Scholarships for Cobequid Educational Centre Students

The Nova Scotia Agricultural College Entrance Scholarship for students from the Cobequid Educational Centre will cover the full first-year tuition for the technical or degree program which the student has chosen. The value of the scholarship is approximately \$5,100 for degree students and \$3,780 for technical students. Eligibility: The top three students graduating from CEC and entering the first year of study in any NSAC program will be awarded the NSAC Entrance Scholarships for CEC Students. Selection will be based on the average from the required courses combined with the school's final rankings. A minimum average of 80% in the courses required for admission will be required. Renewability: The NSAC Entrance Scholarships for CEC Students will be renewed at the value of \$1,500 per year. To be eligible for renewal the student must maintain an 80% average at NSAC and satisfy the criteria for scholarship renewal as outlined on page 139. Presentation: The NSAC Entrance Scholarships for CEC Students will be announced at CEC's graduation and will be formally presented at NSAC's Autumn Assembly in October.

*In the case where one of the top three students from CEC entering studies at NSAC receives an Atlantic Scholars Award, that student would not be eligible to receive The NSAC Entrance Scholarship for CEC Students. The scholarship would then be awarded to the CEC student with the next highest average. Recipients of NSAC Entrance Scholarships for CEC students are not eligible also to receive one of the guaranteed entrance scholarships.

NSAC Scholarships for International Students

Scholarships from \$1,000 to \$5,000 will be awarded to selected International students enrolled for the full year in a program of study at NSAC. The maximum award will be half the tuition for the year of study. All students paying the International tuition differential are eligible for consideration. The awards are merit-based and normally require registration in 80% of the normal course load for the program of study in both the previous and current year of study. Entrance scholarships will be awarded to outstanding applicants who have a minimum of 80% or equivalent admission average on the courses required for admission. In-program scholarships will be offered to outstanding transfer students (an 80% or equivalent average from other postsecondary study is required for consideration) or to returning NSAC students who have maintained a minimum average of 80% in the work of the previous year at NSAC with no failed courses (including Drop Fails), with preference to students who have, in addition, maintained a cumulative average of 80%. The number and value of awards will be dependent on the number of International students eligible for consideration. No application is required.

Nova Scotia Agricultural College Alumni Association Scholarships

The NSAC Alumni Association awards two \$1,000 scholarships to first-year students. Selection will be based on academic performance. No application is required.

Nova Scotia Federation of Agriculture 100th Anniversary Scholarship

In recognition of the 100th Anniversary of the Nova Scotia Federation of Agriculture in 1995, a \$1,000 scholarship is awarded to an NS student with a farm background who has a solid academic record and financial need. Students studying in any year of any program who have not qualified for other significant awards are eligible. Applications must be submitted to the NSAC Awards Office not later than September 20.

Nova Scotia Power Inc. University Scholarship

The \$1,500 Nova Scotia Power Inc. university entrance scholarship is awarded to an NS student entering on a full-time basis the first year of an undergraduate degree program at NSAC. The scholarship is tenable for up to four years (renewed by maintaining an 80% average in the

previous year; other criteria may be considered for renewal). Selection criteria include academic performance and demonstrated involvement in extracurricular activities. Applications must be submitted to the NSAC Awards Office not later than September 20.

Nova Scotia Veterinary Medical Association Bursary

The \$500 Nova Scotia Veterinary Medical Association Bursary will be awarded to an NS student in the first year of the Animal Health Technology program. Selection criteria include financial need and academic performance. Applications must be submitted to the NSAC Awards Office not later than September 20.

Prince Edward Island Institute of Agrologists' Scholarship

The \$500 PEIIA Scholarship is awarded to a PEI student entering the B.Sc.(Agr.) program. Selection criteria include academic performance, school and community involvement, and financial need. Applications must be submitted to the NSAC Awards Office not later than September 20.

Ted Rose Memorial Bursary

The \$500 Ted Rose Memorial Bursary will be awarded to a student who plans to operate a livestock farm eventually. Selection criteria include sound academic performance, financial need, and a documented commitment to animal welfare. Applications must be submitted to the NSAC Awards Office by October 5.

RBC Financial Group Entrance Scholarship

RBC Financial Group, through the RBC Foundation, is sponsoring a \$1,000 Entrance Scholarship to be awarded to a student from a farm family, who is entering the first year of the B.Sc.(Agr.) program at NSAC. Selection criteria include academic performance, extracurricular involvement, and career goals.

Secondary consideration may also be given to geographic location. Applications must be submitted to the NSAC Awards Office not later than May 20.

School Milk Foundation of Newfoundland & Labrador Scholarships

Two \$1,000 scholarships are sponsored by the School Milk Foundation of Newfoundland and Labrador for students from that province entering or continuing in any program of study at NSAC. Preference will be given to students beginning a program of study at NSAC. Selection criteria include career plans that illustrate a genuine interest in an area of agriculture, outstanding community leadership, and academic performance. Applications must be submitted to the NSAC Awards Office not later than Sept 20.

Stewiacke Valley Garden Club Bursary

The \$250 Stewiacke Valley Garden Club Bursary is awarded to a student from the Stewiacke Valley area of Nova Scotia studying at NSAC. Selection criteria include involvement in extracurricular and community affairs, financial need, and academic performance. Applications must be submitted to the NSAC Awards Office by September 20.

Taste of Nova Scotia Quality Food Program Scholarship

The Taste of Nova Scotia Quality Food Program offers a \$1,000 scholarship to an NS student in any year of any program at the Nova Scotia Agricultural College whose course, project work, summer employment, and career plans reflect a commitment to rural communities. Selection criteria include interests in rural entrepreneurship and/or rural development as reflected through course and project work; and financial need. Applications must be submitted to the NSAC Awards Office not later than September 20.

F. W. Walsh Memorial Scholarship

In memory of the outstanding agriculturalist F. Waldo Walsh, this \$400 scholarship is awarded to a student who is admitted to the first year of a degree program at NSAC. Selection is based primarily on academic performance. Financial need and participation in school and community affairs will also be considered. Applications must be submitted to the NSAC Awards Office not later than September 20.

Wentworth Valley Garden Club Bursary

The \$250 Wentworth Valley Garden Club Bursary is awarded to a student from the Colchester or Cumberland County area of Nova Scotia studying in a program related to Horticulture at NSAC. Selection will be based primarily on financial need, with sound academic performance secondary. Applications must be submitted to the NSAC Awards Office by September 23.

Woodside Memorial Scholarships

In memory of Harold and Mary Woodside, formerly of Alderbrook Farm, Margate, PEI, scholarships are awarded to first year PEI students. Selection criteria include academic performance, financial need, future plans and career ambitions, and participation in sports, school, and community activities. Application forms are available from PEI high school Guidance Counsellors or the NSAC Awards Office, and must be submitted not later than August 15.

II. Continuation Scholarships and Bursaries

The following scholarships and bursaries are available exclusively to students returning to studies beyond the first year of the various programs at the Nova Scotia Agricultural College. Students are encouraged as well to check the scholarship listings in Section VII - Other Continuing External Scholarships And Bursaries.

Animal Nutrition Association of Canada (Atlantic Division) Scholarship

The Atlantic Division of the Animal Nutrition Association of Canada (formerly known as the Canadian Feed Industry Association) awards a \$700 scholarship to a student who is entering the third year of the B.Sc.(Agr.) program. Selection criteria include academic performance and leadership in student and community affairs. This scholarship is not available to students receiving other scholarships of higher value. No application is required.

Ralph H. Armstrong Memorial Bursary

The family and friends of the late Ralph Hallett Armstrong award a memorial bursary of \$500 to a student who has successfully completed a first year of study at NSAC. Former or current 4-H club members from Kings or Annapolis Counties in Nova Scotia are eligible to apply. Selection is based on financial need and involvement in school, athletic and/or community organizations. Applications must be submitted to NSAC Awards Office not later than September 23.

Athletic Bursaries

Five awards will be presented to returning student athletes at NSAC. Selection criteria include financial need, involvement in/member of a college varsity team, recommendation from a coach, and satisfactory academic performance. Applications must be submitted to the NSAC Awards Office not later than October 5.

Atlantic Canada Bursaries

NSAC has established a fund which will provide \$1,000 bursaries to assist students in need of financial assistance. To be eligible, students must be in good standing, will have spent at least

one term of full-time study at NSAC, and must be registered on a full-time basis for both semesters for the full academic year. Applications will be reviewed December 9, 2005.

Atlantic Council of Crop Life Canada Bursaries

Two \$500 bursaries will be awarded to technical students from agricultural backgrounds who plan to pursue employment in the agricultural sector following studies at NSAC. Preference will be given to students whose backgrounds, course and project work, summer employment, and career plans reflect an interest in the crop protection industry. The Atlantic Council of Crop Life Canada is the organization of distributors, dealers, and suppliers of crop protection products in Atlantic Canada. As part of the application students will write a brief essay (maximum of 500 words) on their background and their future plans and how their course of study is serving to prepare them for a future in the industry. Applications must be submitted to NSAC Awards Office not later than September 30.

Atlantic Farm Mechanization Show Undergraduate Scholarships

The Atlantic Farm Mechanization Show awards two \$1,000 scholarships to students from the Atlantic Provinces who have completed at least one year of study at NSAC in the Engineering Diploma program or the Bio-Environmental Systems Management option of the B.Sc.(Agr.) program. The awarding of the scholarship is based on academic performance and the demonstrated potential for a career in the area of mechanization of agriculture. No application is required.

Atlantic Fertilizer Institute Scholarship

The Atlantic Fertilizer Institute awards a \$1,000 scholarship to a student from the Atlantic Provinces who is entering the second year of the B.Sc.(Agr.) program. Preference will be given to students with farming interests studying in an option relating to the production of crops. Selection criteria include academic performance, participation in student life, contribution to the college community, and financial need. Applications must be submitted to the NSAC Awards Office not later than September 23.

Atlantic Fertilizer Institute Bursary

The Atlantic Fertilizer Institute awards a \$500 bursary to a second-year student in the technician or farming technology program. Selection criteria include farm interests, leadership qualities within the college community, and academic performance. Applications should be submitted to the NSAC Awards Office not later than September 23.

Atlantic Land Improvement Contractors Association Bursary

The Atlantic Land Improvement Contractors Association Bursary of \$800 is available to degree Engineering students with a demonstrated ability and interest in soil, water, and land improvement. No application is required.

Atlantic Provinces Hatchery Federation Bursary

The Atlantic Provinces Hatchery Federation awards a \$500 bursary to a student from the Atlantic Provinces who is enrolled in subjects that reflect an interest in poultry. A letter of application must be received by September 30 at the following address: Gerry Kennie, President, Atlantic Provinces Hatchery Federation, 43 Minas Warehouse Road, Suite 3, New Minas, NS B4N 5A5

Doug Bailey Memorial Bursary

Farmers Dairy awards a \$2,000 bursary to a student in any year of any program at NSAC who is a family member of a Farmers Dairy shareholder or employee. The bursary is named in memory of Doug Bailey, a former President and CEO. Selection criteria include leadership, extracurricular

and community activities, financial need, and a sound academic record. Applications must be submitted to the NSAC Awards Office no later than October 5.

A.B. Banks Memorial Scholarship

The \$600 A.B. Banks Memorial Scholarship is awarded to the second-year B.Sc.(Agr.) student enrolled in the Animal Science option with the highest average from the first year of study. No application is required.

Bible Hill Garden Club Bursary

The \$250 Bible Hill Garden Club Bursary is awarded to an NSAC student from the Truro area. Preference is given to students in at least the second year of study in Horticulture (preferably Environmental Horticulture), academic performance, and financial need. Applications must be submitted to the NSAC Awards Office by September 23.

David W. Brown Memorial Bursary

The ACA Co-operative Limited awards two \$500 bursaries to students entering a second year of study. Selection criteria include financial need, academic performance, and interest in farming and in the poultry industry in particular. Applications must be submitted to the NSAC Awards Office not later than September 23.

Heather Butcher Memorial Bursary

In memory of Heather Butcher, friends have established a bursary fund which will provide a \$300 bursary to a student who has completed at least one year in a degree program at NSAC. Selection criteria include leadership and participation in student and community affairs, financial need and academic performance. Applications must be submitted to the NSAC Awards Office no later than October 5.

Canada Millennium Scholarship Foundation for National In-Course Awards

The Canada Millennium Scholarship Foundation has implemented a new national in-course awards program. NSAC has been allocated one award which will provide a minimum of \$4,000 to a student who has either completed one year of a technical program or two years of a degree program. Selection criteria will include academic achievement, leadership, and commitment to community service. Twelve hundred awards will be awarded annually. The student selected from NSAC will also be considered for renewable awards of \$4,000 and \$5,000 on a national basis. An internal deadline will need to be set to facilitate the selection prior to the national deadline of July 16. See the NSAC Awards Office for further details.

www.millenniumscholarships.ca

Canadian Association of Agri-Retailers Bursary

The \$1,000 Canadian Association of Agri-Retailers Bursary is awarded annually to an NSAC student in any year of any program whose course work, summer employment, home background, and career plans reflect an interest in Agronomy and the Crop Input industry. Selection criteria will include interest and involvement in Agronomy/field crops and the crop input industry, and financial need. Applications must be submitted to the NSAC Awards Office not later than September 30.

Canard Conservation Undergraduate Scholarship

The \$500 Canard Conservation Undergraduate Scholarship is awarded to a first- or second-year B.Sc.(Agr.) student from Kings County, NS, who is planning course and/or project work related to the environment. Selection criteria include academic performance, demonstrated interest in the environment, and career plans. Applications must be submitted to the NSAC Awards Office no later than May 15.

Gerard Chiasson Memorial Bursary

The Inverness County Federation of Agriculture awards a \$500 bursary to a Cape Breton student who has completed at least one year of study at the NSAC. The bursary is awarded in memory of Gerard Chiasson, a past president of the NS Federadtion of Agriculture who was also active in other local farm and community organizations. Selection criteria include financial need, involvement in community activities, and leadership experience. In the event that two or more students possess otherwise equal qualifications, preference will be given to a student from Inverness County. Applications must be submitted to the NSAC Awards Office not later than September 30.

Chartwells Scholarships

Compass Group Canada awards \$4,000 in scholarships to outstanding students with high academic performance who, for one reason or another, have not qualified for other significant awards. Preference will be given to students living in residence. No application is required.

Chicken Producers of Nova Scotia Bursary

The \$1,000 Chicken Producers of Nova Scotia bursary is awarded to an NS student at NSAC who shows a demonstrated interest in pursuing the study of poultry. Preference will be given to applicants with a farming background. Students in all years of study are eligible. A student may not receive this award more than once. Applications must be submitted to NSAC Awards Office by September 23.

Class of 1950 Bursary Fund

The Class of 1950, in commemoration of their fiftieth anniversary of graduation from NSAC, established a \$500 bursary to assist NSAC students in financial need. Applications must be submitted to the NSAC Awards Office by September 20.

Donald E. Clark Memorial Scholarship

In memory of Donald E. Clark, former Professor and Head of the Engineering Department, one or more scholarships (with total value of \$600) are awarded to final-year students in the Engineering Department. Selection criteria include academic performance, interest, and aptitude in the engineering field. No application is required.

Colonel Charles Coll Memorial Scholarship

In memory of Colonel Charles H. Coll, a \$250 scholarship is awarded to a student in the final year of an Animal Science option. Selection criteria include academic performance, involvement and interest in poultry, and achievement and contribution to 4-H. No application is required.

Charles M. Collins Memorial Scholarship

A \$1,000 scholarship will be awarded annually to a student at NSAC who is enrolled in a program of study relating to Horticulture. The scholarship is in memory of Charles McKittrick Collins who taught Horticulture at NSAC for twenty-five years, including supervision of the landscaping and maintenance of the campus grounds, and for whom the Collins Horticultural Building was named in 1975. Preference will be given to students studying in the Bachelor of Technology program in Environmental Horticulture who have not qualified for other significant awards. No application is required.

George & Lottie Cook Memorial Scholarship

The \$500 George and Lottie Cook Memorial Scholarship is awarded annually to an NS student enrolled in the first or second year of any program of study at NSAC. Selection criteria include

academic performance and financial need. Applications must be submitted to the NSAC Awards Office not later than September 20.

Co-op Atlantic Scholarship

Co-op Atlantic awards a \$1,000 scholarship to a student at NSAC from the Atlantic Provinces who is entering the third year of the B.Sc.(Agr.) program. Selection criteria include academic performance, financial need, and knowledge and appreciation of co-operatives. The award is tenable for two years. Applications must be submitted to the NSAC Awards Office not later than September 30.

Dorothy Creelman Cox Memorial Scholarship

A \$150 scholarship is awarded to a female student entering the second year of the B.Sc.(Agr.) program in the Plant Science option. Selection criteria include academic performance and contribution to the college community. No application is required.

Dr. Kenneth Cox Memorial Scholarship

In memory of Dr. Kenneth Cox, former Principal, this \$100 scholarship is awarded to a student entering the final year of the B.Sc.(Agr.) program. No application is required.

Dairy Farmers of Nova Scotia Bursary

The Dairy Farmers of Nova Scotia awards a \$1,000 bursary to an NS student doing project or course work related to the dairy industry. Students in the third or fourth year of the B.Sc.(Agr.) program (any option) or graduate students undertaking course or project work related to the dairy industry are eligible. Selection criteria include proven interest and experience in the dairy industry, the potential beneficial impact of study on the Nova Scotia dairy industry, and academic performance. Applications must be submitted to the NSAC Awards Office not later than September 30.

Dartmouth Horticultural Society Bursary

The \$500 Dartmouth Horticultural Society Bursary is awarded to a student in the final year of studies at NSAC. Selection criteria include financial need, interest and experience in the agri-food industry and academic performance. Although students in all programs are eligible, preference will be given to a student in a Plant Science (horticulture) program. Applications must be submitted to the NSAC Awards Office by September 23.

Eastern Veterinary Technicians Association Bursary

The Eastern Veterinary Technicians Association awards a \$100 bursary and a stethoscope (value \$100) to a third-year student in the Animal Health Technology program. This bursary will be awarded to the student who best demonstrates proficiency in veterinary clinical skills during the second year and externship at the Atlantic Veterinary College. No application is required.

Ernest L. Eaton Memorial Scholarships

Two \$500 scholarships, one for a male and one for a female, are awarded to non-Nova Scotian students entering the third year of the B.Sc.(Agr.) program. Selection is based on the students' averages in the second year of their program. No application is required.

Egg Producers of Newfoundland & Labrador Scholarship

The Egg Producers Association of Newfoundland and Labrador (formerly known as the Newfoundland Egg Marketing Board) awards a \$1,000 scholarship to an NL student entering the third or fourth year of the B.Sc.(Agr.) program. Applications must be submitted to the NSAC Awards Office not later than September 30.

Farm Credit Canada Scholarship

The Atlantic Region of the Farm Credit Canada awards a \$1,000 scholarship to a Canadian student entering the fourth or final year of the B.Sc.(Agr.) program in the Agricultural Economics or Agricultural Business options. Selection criteria include academic performance, interest and competence in farm management and in the subjects associated with the economics of the farm business, interest and involvement in college and home community as demonstrated by participation in organizations and affairs, farm experience, and financial need. No application is required.

Farm Focus Bursary

The Farm Focus Bursary of \$200 is awarded to a student entering the second year of study. Selection is based on financial need and academic performance. No application is required.

Great Village Garden Club Bursary

The \$250 Great Village Garden Club Bursary is awarded to a student in any year of any program who has not qualified for other scholarships or awards. No application is required.

Chuck Harrison Memorial Bursary

In memory of Chuck Harrison, Class of 1970, a \$200 bursary is awarded to a final-year Agricultural Business Technician student. Selection criteria include leadership and involvement in athletic and other activities at NSAC, and a sound academic record. No application is required.

Bonnie R. Haviland Memorial Bursary

The \$1,000 Bonnie R. Haviland Memorial Bursary will be awarded annually to a student entering the second year of the Animal Health Technology program whose performance in the first year has demonstrated a caring attitude and a commitment to others. To be eligible, students must have done well in their first year and not won other scholarships of greater value. No application is required.

Isgonish Chapter Silver Anniversary IODE Bursary

The \$400 Isgonish Chapter Silver Anniversary IODE bursary is awarded to a student entering the third year of the B.Sc.(Agr.) program in the Aquaculture major. Selection criteria include financial need, academic performance, and participation and leadership in extracurricular activities. The bursary is renewable by maintaining an 80% average. One award will be presented to either a third-year student or a fourth-year student as a renewal to the previous year's recipient. Applications must be submitted to the NSAC Awards Office by September 23.

Kings Mutual Insurance Scholarships

In memory of Past Directors, the Kings Mutual Insurance Company awards three \$1,000 scholarships to Nova Scotia students, in any year of any program of study, at NSAC. At least one scholarship will be awarded to a Technical student. Selection criteria include financial need, academic performance, and demonstrated interest in a career in the agri-food industry as reflected by summer employment and/or extracurricular involvement. This scholarship is not available to students receiving other scholarships totalling \$1,000 or more. Applications must be submitted to the NSAC Awards Office not later than October 5.

Landscape Nova Scotia Bursary

Landscape Nova Scotia awards a \$500 bursary to an NS student studying Environmental Horticulture. Selection criteria include academic performance and financial need. No application is required.

Lunenburg/Queens Federation of Agriculture Scholarship

The Lunenburg/Queens Federation of Agriculture Scholarship of \$300 is awarded to a student from Lunenburg or Queens counties in Nova Scotia who has completed at least one year of study at NSAC. Selection criteria include academic performance, farm or agricultural background or experience, and plans to pursue a career in the agricultural industry. Applications must be submitted to the NSAC Awards Office not later than September 30.

Angus and Tena MacLellan Memorial Scholarship

This \$600 scholarship is awarded to a student entering the third or fourth year of a degree program. Angus and Tena MacLellan farmed in Cloverville, Antigonish County, Nova Scotia. No application required.

Dr. Herbert F. MacRae Memorial NSAC/Macdonald College Exchange Award

This \$1,000 award is designed to support student and staff exchange between NSAC and Macdonald College of McGill University. Students considering a semester or a year of study at Macdonald College as part of the requirements of a program of study at NSAC or students transferring to a program of study at Macdonald College should inquire at the Awards Office for details.

Joseph E. Mapplebeck Memorial Bursaries

In honor of Joseph E. Mapplebeck, who farmed for 50 years in Kings County, Nova Scotia, and in recognition of his appreciation for the importance of a good education, family members have established two \$500 bursaries to be made available to Technical students at NSAC. Eligible candidates will have successfully completed the first year of a Technical program and demonstrate financial need. A letter of recommendation from a faculty member must accompany this application. One of the two awards will be made available annually to a student in the Plant Science Technician program. Applications must be submitted to the NSAC Awards Office not later than September 23.

H.A.L. McLaughlin Memorial Scholarship

In memory of H.A.L. McLaughlin, who taught horticulture at NSAC from 1953 to 1971, this \$300 scholarship is awarded to a student in horticulture. No application is required.

A.C. Neish Memorial Trust Scholarship

The A.C. Neish Memorial Trust awards a \$1,700 scholarship to an NSAC student entering the final year of the B.Sc.(Agr.) program. Selection criteria include high academic performance and qualities of leadership as indicated by participation and achievement in both academic and non-academic activities. Applications must be submitted to the NSAC Awards Office not later than September 30.

Nova Scotia Animal Breeders Co-operative Limited Scholarship

The Nova Scotia Animal Breeders Co-op awards four \$1,250 scholarships (two to degree students and two to Technical students) to returning NS students studying animal science whose home farm backgrounds, course and project work, and career interests reflect an interest in the dairy or beef industry. To be eligible, students will not have received other major scholarships. Applications must be submitted to the NSAC Awards Office not later than October 5.

Nova Scotia Federation of Agriculture Bursaries

The Nova Scotia Federation of Agriculture awards two \$300 bursaries to second-year Nova Scotia students (one Technical and one degree). Selection criteria include financial need and academic performance. No application is required.

Nova Scotia Federation of Agriculture 100th Anniversary Scholarship

In recognition of the 100th Anniversary of the Nova Scotia Federation of Agriculture in 1995, a \$1,000 scholarship is awarded to an NS student with a farm background, who has financial need and a solid academic record. Students studying in any year of any program who have not qualified for other significant awards are eligible. Applications must be submitted to NSAC Awards Office not later than October 5.

Nova Scotia 4-H Council Award

A \$200 scholarship will be awarded to a second-year NS student in any program. Selection criteria include academic performance, financial need, and participation in 4-H club activities. Applications must be submitted to the NSAC Awards Office not later than September 23.

Nova Scotia Institute of Agrologists Scholarship

The \$1,000 NSIA Scholarship is awarded to an NS student entering the third year of the B.Sc.(Agr.) program at NSAC. In awarding the scholarship, the selection committee will take into consideration academic performance, participation in school and community activities, degree of interest in agrology and pursuing a career in the agri-food industry, and financial need. Applications must be submitted to the NSAC Awards Office not later than September 20.

Nova Scotia Institute of Agrologists 50th Anniversary Scholarship

In recognition of the 50th anniversary of the Nova Scotia Institute of Agrologists in 2003, a \$1,000 scholarship will be awarded to an NS student entering the second, third or fourth year of the B.Sc.(Agr.) program at NSAC. Selection criteria include academic performance, extracurricular activities and interest in the profession of agrology as demonstrated through career plans. Applications must be submitted to the NSAC Awards Office not later than September 20.

NSERC Undergraduate Student Research Awards (USRA)

The Natural Sciences and Engineering Research Council of Canada sponsors a program of awards to outstanding undergraduate students. These summer research awards are meant to encourage undergraduate students to undertake graduate studies and pursue a research career in the natural sciences and engineering disciplines at NSAC. The purpose of the award is to supplement the salary of a summer student who is working on an individual research project, designed in conjunction with a faculty member who holds an NSERC research grant. The award is for a minimum of sixteen weeks on a full-time basis in research and development in natural sciences and engineering. To be eligible, students must be Canadian citizens or permanent residents, be registered full-time as undergraduate students in a natural science or engineering discipline, and have completed at least one year of study with a minimum 70% cumulative average. Applications must be submitted to the Office of Graduate Studies and Research by February 15.

Don Palfrey Scholarship

A \$1,000 scholarship will be awarded annually in recognition of the many years of service and contributions to weed science in Nova Scotia by Don Palfrey. The Don Palfrey Scholarship will be awarded to an undergraduate student who is carrying out a senior year research project in the area of pest management, with a preference given to students involved in weed science, either through academic work or summer employment. Applications are due at the NSAC Awards Office no later than September 23.

Robert Parent Memorial Scholarship

In memory of Robert Parent, Class of 1921, this \$1,000 scholarship will be awarded to an outstanding student studying in any year of any program who has not qualified for other significant awards. No application is required.

Pork Nova Scotia Prize

Pork Nova Scotia sponsors a \$350 prize to an NS student with an interest and/or background in swine production. Selection criteria include demonstrated interest in the swine industry (through course or project work), academic performance, and financial need. Applications should be submitted to the NSAC Awards Office not later than September 30.

Prajna Athletic Bursaries

Two \$100 awards (one to a male student and one to a female student) will be presented to returning students at NSAC. These awards have been provided by Dr. Andre Lirette, a former Professor in the Animal Science Department at NSAC. To be eligible, students must maintain sound academic performance and will have been involved in either a varsity team or on an intramural/recreational team at NSAC. Selection criteria include financial need, leadership, and contribution to student life. Applications must be submitted to the NSAC Awards Office not later than October 5.

PEI Swine Breeders' Association Bursary

The PEI Swine Breeders' Association provides a \$500 bursary to a PEI student who has successfully completed at least one year of study in an animal science discipline at NSAC. Selection criteria include financial need, demonstrated interest in swine, and involvement in community, 4-H, and student affairs. A student may not receive this bursary more than once. Applications must be submitted to the NSAC Awards Office no later than September 30.

Cliff Retson Memorial Bursary

In memory of Cliff Retson, Class of '34, a \$600 bursary is awarded to an International student studying at NSAC. Students in any year of any program are eligible. Selection criteria include financial need, academic performance, and interest in and involvement in multicultural activities on campus. Applications must be submitted to the NSAC Awards Office not later than September 30.

Ira L. Rhodenizer Memorial Scholarship

In memory of Ira L. Rhodenizer, the Nova Scotia Federation of Agriculture awards a \$300 scholarship to a second-year NS student. Selection criteria include academic performance, involvement in student affairs and participation in the 4-H program. Applications must be submitted to the Awards Office not later than September 23.

Dr. Robert G. Rix Family Farm Bursary

This bursary of \$300 is awarded to a student who enters the final year of the Farming Technology program. Selection criteria include the student's determination and dedication to the objective of operating a family farm, the extent to which the student is hard-working and conscientious, and financial need. No application is required.

J. Arnold Roberts Memorial Scholarship

In memory of J. Arnold Roberts, a \$750 scholarship will be awarded to an outstanding student from Atlantic Canada studying in any year of any program not receiving scholarships of greater value. No application is required.

Robin Hood Multifoods Inc. Bursary

Robin Hood Multifoods Inc. awards a \$1,200 bursary to a student from Atlantic Canada who is entering the second year of a Business or Economics or Animal Science program. The scholarship

is to encourage students to consider a career in sales and technical service in private industry. Applications must be submitted to the NSAC Awards Office not later than September 23.

Howard W. Roper Memorial Bursary

In memory of Howard W. Roper, a \$500 bursary will be awarded annually by the Nova Scotia/Newfoundland Branch of Holstein Canada to a second-year Technician student at the Nova Scotia Agricultural College. Applicants must be residents of Nova Scotia or Newfoundland and Labrador and members of Holstein Canada or members of families with Holstein Canada membership. Selection criteria include involvement in the dairy industry, extracurricular involvement through athletics and clubs on campus, involvement in farm organizations, financial need, and satisfactory academic performance in the first year of study at NSAC. Applications must be submitted to the NSAC Awards Office not later than September 30.

Ted Rose Memorial Bursary

The \$500 Ted Rose Memorial Bursary will be awarded to a student who plans to operate a livestock farm eventually. Selection criteria include a documented commitment to animal welfare, financial need and sound academic performance. Applications must be submitted to the Awards Office by October 5.

Rhonda Rae Rumbolt Memorial Scholarship

In memory of Rhonda Rae Rumbolt, a \$2,000 scholarship is awarded to an outstanding final-year B.Sc.(Agr.) student. Selection criteria include leadership and involvement in the college community as displayed by participation in extracurricular activities, combined with an outstanding academic record. Applications must be submitted to the NSAC Awards Office not later than September 30.

Scholarships for In-Program Students

At the discretion of the Scholarship Committee, scholarships of variable amounts will be awarded to students who perform well in their studies at NSAC. The minimum requirement will be 80% average in work of the previous year with no failed courses (including Drop Fails) with preference to students who have, in addition, maintained a cumulative average of 80.0%. The average is determined from the full year of study which is normally defined as September 1 to August 31. The average is determined by all marks earned by the student in the previous year; non-credit courses (CHEM0050, MATH0050 and PHYS0050) are included in the calculation of the year's average for degree students. For scholarship purposes averages are calculated to the nearest whole number (if an average falls exactly between two whole numbers, the average is rounded up). To be eligible, students must maintain registration in at least 80% of the number of courses for the normal course load per semester for both the previous and current year. In the event that a recipient is not able to complete the full year, on completion of the first semester on a full-time basis he/she would be entitled to receive half the award announced at Autumn Assembly.

Scholarships for International Students

Scholarships from \$1,000 - \$5,000 will be awarded to selected International students enrolled for the full year in a program of study at NSAC. The maximum award will be half the tuition for the year of study. All students paying the International tuition differential are eligible for consideration. The awards are merit-based and normally require registration in 80% of the normal course load for the program of study in both the previous and current year of study.

Entrance scholarships will be awarded to outstanding applicants who have a minimum of 80% or equivalent admission average on the courses required for admission. In-program scholarships will be offered to outstanding transfer students (an 80% or equivalent average from other postsecondary study is required for consideration) or to returning NSAC students who

have maintained a minimum average of 80% in the work of the previous year at NSAC with no failed courses (including Drop Fails). Preference is given to students who have, in addition, maintained a cumulative average of 80%. The number and value of awards will be dependent on the number of International students eligible for consideration. No application is required.

Shur-Gain Division/Maple Leaf Foods, Inc. Scholarship

Shur-Gain Division/Maple Leaf Foods, Inc. awards a \$1,000 scholarship to a final-year B.Sc.(Agr.) student in the Animal Science option. Selection criteria include academic performance, leadership qualities, and participation in student & community affairs. Applications must be submitted to the NSAC Awards Office not later than Sept 30.

G.G. Smeltzer Memorial Bursary

The \$1,000 G.G. Smeltzer Memorial Bursary is awarded to a third- or fourth-year student from Atlantic Canada studying in the B.Sc.(Agr.) program majoring in Plant Science (Agronomy specialization). Selection criteria include a genuine interest in the area of field crops reflected through course and project work and summer employment, and financial need. No application is required.

Stewiacke Valley Garden Club Bursary

The \$250 Stewiacke Valley Garden Club Bursary is awarded to a student from the Stewiacke Valley area of Nova Scotia studying at NSAC. Selection criteria include involvement in extracurricular and community affairs, financial need, and academic performance. Applications must be submitted to NSAC Awards Office by September 23.

Syngenta Pest Management Awards

Syngenta Crop Protection awards two \$500 scholarships to students at NSAC whose course and project work reflect an interest in the Maritime potato industry. Applicants will be required to submit an essay (300-500 words) expressing an opinion on a topic relating to the crop protection industry. Suggested topics include the future of genetically modified plants/crops, or the future of crop protection products to Maritime agriculture (the fit and relevance of the agri-chemical industry to today's agri-food industry). Selection criteria include academic performance, interest in the Maritime potato industry, and potato farm experience or background. Applications must be submitted to the NSAC Awards Office not later than September 30.

Taste of Nova Scotia Quality Food Program Scholarship

The Taste of Nova Scotia Quality Food Program offers a \$1,000 scholarship to an NS student in any year of any program at NSAC whose course, project work, summer employment, and career plans reflect a commitment to rural communities. Selection criteria include interests in rural entrepreneurship and/or rural development as reflected through course and project work, and financial need. Applications must be submitted to the Awards Office not later than October 5.

Bruce Trenholm/Atlantic '86 Scholarship

A \$500 prize is awarded to a student from Atlantic Canada entering the final year of any program, who has a Holstein farm or 4-H (Holstein calf project) background. Selection criteria include academic performance and career goals. Applications must be submitted to the NSAC Awards office not later than September 30.

Vice-President's Scholarship

This \$300 scholarship is awarded to a final-year B.Sc.(Agr.) student. No application is required.

Florence (Pineo) Ward Memorial Awards

In memory of Florence (Pineo) Ward, three to five bursaries with a total value of \$2,000 will be awarded annually to NSAC students in financial need. Recipients will have completed at least one year of study in a Technical, B.Tech. or B.Sc.(Agr.) program. Preference will be given to students with sound academic background who have come to NSAC for technical training to enhance their employability but whose financial constraints are limiting their ability to continue their studies. In the event that two or more candidates otherwise qualify for one of the awards, preference will be given to students from Boutilier's Point, Halifax County, or Advocate, Cumberland County. Application forms must be submitted to the NSAC Awards Office not later than October 5.

Raymond Webber Memorial Scholarship

Landscape Nova Scotia and the New Brunswick Horticultural Association jointly award a \$600 scholarship to the most promising second-year Landscape Horticulture Technology student. Selection criteria include academic performance and practical work skills. No application is required.

Wentworth Valley Garden Club Bursary

The \$250 Wentworth Valley Garden Club Bursary is awarded to a student from the Colchester or Cumberland County area of Nova Scotia studying in a program related to Horticulture at NSAC. Selection will be based primarily on financial need, with sound academic performance secondary. Applications must be submitted to the NSAC Awards Office by September 23.

Michael Whidden Memorial Award

The \$2,000 Michael Whidden Memorial Award will be awarded to a student who has provided leadership on the College's Woodsmen Team, and has maintained a sound academic performance. No application is required.

Eric Williams Memorial Scholarships

Two \$1,000 scholarships sponsored by the Dairy Farmers of Newfoundland and Labrador are awarded to NL students who have completed at least one year of study at NSAC in any program (generally, one to a technical student and one to a degree student). Selection will be based on academic performance. No application is required.

Wild Blueberry Producers Association of Nova Scotia Scholarship

The Blueberry Producers Association of Nova Scotia awards a \$750 scholarship to a Plant Science student entering the third or fourth year of the B.Sc.(Agr.) program. Selection will be based on academic performance and financial need. Preference will be given to someone with interest and experience in small fruits. Applications must be submitted to the NSAC Awards Office not later than September 30.

III. Graduate Scholarships and Bursaries

The following scholarships are available exclusively to graduate students studying at the Nova Scotia Agricultural College.

Stuart F. Allaby Graduate Studies Scholarship

The \$1,000 Stuart F. Allaby Graduate Studies Scholarship is awarded to an M.Sc. student at NSAC concentrating on animal research. No application is required.

Atlantic Farm Mechanization Show Graduate Scholarship in Engineering

The \$1,000 Atlantic Farm Mechanization Show Graduate Scholarship in Engineering is awarded annually to an M.Sc. student at NSAC conducting research in engineering. No application is required.

Doug Bailey Memorial Bursary

Farmers Dairy awards a \$2,000 bursary to a student in any year of any program at NSAC who is a family member of a Farmers Dairy shareholder or employee. The bursary is named in memory of Doug Bailey, a former President and CEO. Selection criteria include leadership and extracurricular and community activities, financial need and a sound academic record. Applications must be submitted to the NSAC Awards Office not later than October 5.

Canard Graduate Conservation Fund Scholarship

The Canard Conservation Fund provides a \$2,000 scholarship to a graduate student at NSAC conducting research work on environmental issues. Selection criteria will include research aptitude and experience, relevance of the applicant's research to conservation issues, and sound academic performance. Only full-time students will be eligible, and preference will be given to students in the second year of study in the M.Sc. program. Applications should include an essay on the importance of the research to conservation issues, accompanied by a resume and official transcript. Applications must be submitted to the NSAC Awards Office not later than July 29.

Dairy Farmers of Nova Scotia Bursary

The Nova Scotia Milk Producers Association awards a \$1,000 bursary to an NS student doing project or course work related to the dairy industry. Students in the third or fourth year of the B.Sc.(Agr.) program (any option) or graduate students undertaking course or project work related to the dairy industry are eligible. Selection criteria include proven interest and experience in the dairy industry, the potential beneficial impact of study on the Nova Scotia dairy industry, and academic performance. Applications must be submitted to the NSAC Awards Office not later than September 30.

Gordon B. Kinsman Memorial Graduate Scholarships

Two \$1,500 Gordon B. Kinsman Memorial Graduate Scholarships will be awarded to graduate students in Horticulture at NSAC. At least one of the scholarships each year will be awarded to a student conducting research work related to the blueberry industry. Applications must be submitted to the NSAC Awards office not later than July 2.

Robert P. Longley Memorial Graduate Scholarships

Two \$7,000 scholarships will be awarded to NS residents entering the M.Sc. degree program on a full-time basis at NSAC. The scholarships will be awarded on the basis of academic performance (cumulative GPA from undergraduate degree). Recipients of NSAC Graduate Entrance Scholarships will not be eligible. Students on employment leave with salary continuation are not eligible. No application is required.

NSAC Association of Graduate Students Bursary

Any graduate student of the Nova Scotia Agricultural College is eligible to apply (any year; full time or part time). This award is valued at \$400 and selection is based on financial need. Applications must be submitted to the Awards Office not later than October 5.

NSERC Post-Graduate Scholarships

The Natural Sciences and Engineering Research Council of Canada provide post-graduate scholarships to high-calibre scholars who are engaged in Master's or Ph.D. programs in the natural sciences and engineering disciplines at universities in Canada. To be eligible, students must be Canadian citizens or permanent residents of Canada who hold, or expect to hold at the

time to take up the award, a degree in science or engineering from a university whose academic standing is acceptable to NSERC, who will pursue full-time graduate study and research at the Master's or Ph.D. level in the natural sciences or engineering in the following year, and have an 80% average in each of the last two completed years of study. The value of the awards: \$17,300 per year for students studying at the Master's level and \$19,100 per year for students studying at the Ph.D. level. The awards are tenable for a maximum of two years. Applications must be received at the office of Research and Graduate Studies by November 1.

NSAC Graduate Entrance Scholarships

The Nova Scotia Agricultural College offers up to five scholarships of \$5000 to students approved (or conditionally approved) for admission to the NSAC/Dalhousie M.Sc. program. Students who have applied for admission to the graduate program at NSAC by the end of June each year will be considered for these awards. Only those applicants who have achieved a minimum cumulative undergraduate average of 80% or equivalent will be considered. Only students entering graduate studies on a full-time basis are eligible. Although academic performance will be the prime selection basis, consideration will also be given to the diversity of backgrounds of candidates (including gender, country of origin, institution of origin, minority groups, supervisors, and programs of study). No application is required.

Allan A. Saunders Memorial Graduate Scholarship

The \$3,000 Allan A. Saunders Memorial Graduate Scholarship is awarded annually to a graduate student at NSAC who is conducting research relating to the Dairy Industry. Applicants who have completed their undergraduate degree at NSAC and wish to pursue their Master's at another postsecondary institution will be considered. Selection criteria include academic performance, dairy farm background and/or demonstrated interest in the dairy industry and financial need. Applications are due at the NSAC Awards Office not later than July 29.

Dr. Chesley E. Smith Memorial Graduate Scholarship

The \$500 Dr. Chesley E. Smith Memorial Scholarship is awarded annually to a graduate student at NSAC. All full-time M.Sc. students will be considered. Preference will be given to students whose course and project work reflect an interest in Plant Science or Agronomy. Selection criteria include academic performance and financial need. Applications must be submitted to the NSAC Awards Office not later than July 29.

Graduate students are encouraged to look through the scholarship descriptions listed in Section II (Continuation Scholarships and Bursaries), Section V (Scholarships and Bursaries for Continuing Studies Beyond NSAC) and Section VII (Other Continuing External Scholarships and Bursaries) for awards available to students in any year of any program.

M.Sc. students are eligible for consideration for awards targeted to any year of any program.

IV. Medals & Prizes

Canadian Agricultural Economics Association Prize

The Canadian Agricultural Economics Association presents a book prize at Spring Convocation to a graduating student from the Agricultural Economics or Agricultural Business option of the B.Sc.(Agr.) program. This award is selected on the basis of overall performance. No application is required.

Canadian Society of Animal Science Prize

The Canadian Society of Animal Science presents a book prize at Autumn Assembly to a student in the fourth year of the Animal Science or Aquaculture options of the B.Sc.(Agr.) program. This award is selected on the basis of outstanding scholarship. No application is required.

Canadian Society of Soil Science Book Prize

The Canadian Society of Soil Science annually awards a book prize valued at approximately \$100 to an undergraduate student whose course and project work reflect an interest in Soil Science. Students in any year of the B.Sc.(Agr.) program are eligible. No application is required.

K. de Geus Memorial Prize for Plant Science

In memory of the late K. de Geus, a prize is awarded to a Technical graduate. Selection is based on high standing in course work, and preference is given to students in the horticultural field. No application is required.

Noel Enman Memorial Award

Established in 1984, the Noel Enman Memorial Award is presented annually in memory of NSAC alumnus Noel Enman, 1961-1983, to a technician or technology graduate whose personality and fellowship have contributed to student life and activities, thereby gaining the respect of the students and faculty at NSAC. Nominations should be submitted through the office of the Dean of Student Services by February 14. The award is presented at the graduation class banquet prior to Convocation.

Farm Credit Canada Business Planning Awards

Sponsored by Farm Credit Canada, the purpose of this award program is to encourage agricultural students to apply their knowledge and create "real-life" farm business plans for their operations (home, existing or start-up). The awards are open to students in the final year of the Agricultural Business Technician program, the Agricultural Technology or the Farming Technology programs who complete farm business plans during business project courses (MGMT0201 Business Project, MGMT0300 Farm Project, MGMT0302 Technology Project). Degree students who do Farm Business plans as part of their requirements for RESM4004 and RESM4005 will also be considered. Projects will be evaluated on the following basis: 60% on content including realistic basis and accurate calculations, 30% on writing, and 10% on format and presentation. A student who has received one FCC Farm Business Planning Award is not eligible for a second one. Two cash prizes will be presented at Convocation (one of \$1,500 and one of \$500). No application is required.

H.J. Fraser Memorial Prize for English

In memory of the late Professor H.J. Fraser, a prize is awarded to a second-year student who has achieved excellence and provided significant contribution to the discussion in a first-year English course at NSAC. No application is required.

Dr. Gerry W. Friars Undergraduate Research Prize

The Dr. Gerry W. Friars Undergraduate Research Prize of \$250 is awarded at Convocation to the student who is judged to have completed the best written research report as part of the fourth-year project requirements. Dr. Friars, an NSAC alumnus from 1948, was introduced to scientific research by an undergraduate research project. This was the beginning of a career in research and teaching. No application is required.

Governor-General's Medals

The gold Governor-General's Medal is awarded to the M.Sc. graduate from the current year with the highest compiled score of the thesis, thesis defence, graduate course record, and teaching performance. A silver Governor-General's Medal is awarded to the Bachelor's graduate (B.Sc.(Agr.) or B.Tech) who achieves the highest cumulative academic standing in the program. A bronze Governor-General's Medal is awarded to the Technical (technician or technology)

graduate who achieves the highest academic standing in the program. To be eligible, students must have completed at least one half their program at NSAC. No application is required.

Ketchum Manufacturing Company Limited Prize

The Ketchum Manufacturing Company Limited Prize of \$100 is awarded to a graduate of the Animal Science option. No application is required.

Novartis Award

The Novartis Award is presented at Convocation to the top all-round student graduating from the Animal Health Technology program who has particularly excelled in the area of parasitology. No application is required.

Patterson Palmer Law Prize

Patterson Palmer offers a \$500 prize to any full-time student enrolled at NSAC who has lived or worked on a farm. Applicants are required to submit an essay, 500 to 1,000 words in length, regarding any major issue facing the farming community. The student who receives the award will be chosen on the basis of the quality of the essay written. Essays will be evaluated on the basis of insight into issues, quality of writing and readability, and organization. Applications must be submitted to the NSAC Awards Office not later than September 20.

V. Scholarships and Bursaries for Continuing Studies beyond NSAC

APENS Award and Scholarship

The Association of Professional Engineers of Nova Scotia (APENS) provides awards valued at \$500 and a scholarship valued at \$2,000. One APENS Award is presented each year at each of the Associated Universities to that student, graduating with an Engineering Diploma, who best demonstrates the promise of using outstanding abilities to serve society in an ethical manner as a Professional Engineer. Selection criteria include: qualities of ethical conduct, extracurricular activities, industry and intelligence, scholastic achievement, service to fellow students, and application of technical skills in an unselfish manner to the benefit of society and the promotion of the engineering profession. The APENS Scholarship is awarded to one of the APENS Award recipients graduating from the Associated Universities who exhibits academic excellence.

Cobequid Dog Club Scholarship

The Cobequid Dog Club awards a \$400 scholarship to an NS student from the NSAC who is admitted to a veterinary college. No application is required.

Harney Estate Scholarships

Dr. Patricia Harney, NSAC Diploma Class of '48 and OAC Professor in Horticultural Sciences, has made generous provision through her estate to support NSAC students who wish to pursue research-focused graduate studies in agriculture at the University of Guelph or at Macdonald College, McGill University. One \$5,000 renewable scholarship from this fund is to be granted each year, based on high academic records, to a student who is committed to research excellence. This scholarship serves to preserve the long-standing links between NSAC, Macdonald College and Guelph. It is tenable for two years for a Master's degree program and three years for a Ph.D. program. Renewability will be based on maintaining scholarship standing in the program (will require A- or 80%). See the NSAC Awards Office for further information.

To be eligible, NSAC graduates must be accepted or registered at Macdonald College or the University of Guelph for graduate work in agriculture. While registered at the University of Guelph or Macdonald College recipients may, with appropriate permission, pursue research at NSAC. Scholarship funds will be disbursed to the recipient through the institution in which the

student is registered. Initial review of applications will take place March 31, following which applications will be reviewed as received, conditional on funds remaining.

Edith Main Memorial Bursary

In memory of Edith Main, the auxiliary to the Nova Scotia Veterinary Medical Association awards a \$100 bursary to an NS student who has attended NSAC and has been admitted to a Canadian veterinary college. No application is required.

Nova Scotia Fur Institute Scholarship

The Nova Scotia Fur Institute awards a \$2,500 scholarship to a graduate in Animal Science from the NSAC who is pursuing graduate studies in fur production at an approved university. Selection will be based primarily on academic performance. Applications must be submitted not later than March 31 to: Chairman, Nova Scotia Fur Institute, Nova Scotia Agricultural College, Box 550, Truro, NS B2N 5E3

Nova Scotia Power Inc. Centennial Scholarships in Engineering

In 1967 Nova Scotia Power instituted four permanent scholarships as a continuing Centennial project. These scholarships are open to students completing engineering studies at the following associated universities: Acadia, Dalhousie, Mount Allison, St. Francis Xavier, Saint Mary's, the University College of Cape Breton, and the Nova Scotia Agricultural College. The scholarships are for a term of two years at \$1,500 per year and are applicable to Electrical, Mechanical, Chemical, Civil, and Industrial disciplines. Applicants must be Canadian citizens and residents of Nova Scotia for at least three years, two years of which are immediately prior to graduation. A selection board considers the academic excellence, personality, and involvement in extracurricular activities of applicants recommended by the Agricultural Engineering Department at NSAC. Continuance of the scholarships will be conditional on the attainment of a satisfactory academic record. Application deadline is April 30.

VI. Other Entrance External Scholarships and Bursaries

(Although not exclusive to NSAC students, the following scholarships/awards are available to students entering NSAC.)

African Nova Scotian Student University Entrance Scholarships

Valued at \$4,500, these scholarships are available to African Nova Scotia students who successfully complete Grade 12 in the public school system of NS within the current year, who have obtained an average of 75% in select courses, and who have been accepted at and will attend a university in the academic year immediately following Grade 12. Applicants must be enrolled in a full-time degree program. Application deadline is May 30 each year.
www.acs.ednet.ns.ca.

Wallace Anderson Memorial Scholarship Fund

The scholarship is for manual Deaf students(s) living in Southwestern New Brunswick who wish to further their educational goals on a full-time or part-time basis. Application form must be submitted no later than April 30 to: Saint John Deaf and Hard of Hearing Services Inc., c/o Scholarship Fund Committee (sjdhhs@nb.sympatico.ca).
www.sjdhhs.com/Wallace%20Anderson%20Memorial%20fund.htm

Aquaculture Association of Canada Scholarship

Six \$1,000 scholarships will be awarded annually to AAC student members enrolled in a postsecondary institution in an aquaculture-related program. Selection is based on scholastic

ability (transcript of marks); interest and involvement in aquaculture (e.g. summer employment); publication record, if any; and a 250-word essay on where the applicant sees him/herself contributing to sustainable aquaculture development in the future. Application deadline is November 15, 2005. Contact the NSAC Awards Office for further details. www.aquacultureassociation.ca/scholarship

Association of Nova Scotia Housing Authorities

Several \$1,000 renewable awards are awarded to NS residents who live in housing units administered by a Nova Scotia Housing Authority, and need financial assistance to enable them to continue their education at a postsecondary level (e.g. university, community college, trade school, or technical school). Awards are tenable at any legally recognized educational institution chosen by the applicant and approved by ANSHA. Application deadline is May 1 each year. Information and application forms are available at ANSHA Student Awards Committee, Box 753, Amherst, NS B3H 4B9

Atlantic Canada Marine Biodiversity Essay Contest

The Centre for Marine Biodiversity is announcing an annual essay contest open to all Grade 12 students in Atlantic Canada. The contest is intended to increase awareness of the biological diversity within Canada's vast ocean territories. Each student will write an original essay addressing the following statement: Focus on an issue concerning marine biodiversity in Canada and provide insight into how it might be addressed in the future. Other topics are listed to address in essay as well; more details concerning the essay can be found on the website. Application deadline is April 15, 2005. www.marinebiodiversity.ca

Alexander Graham Bell Association for the Deaf Scholarship Awards

The Alexander Graham Bell Association for the Deaf administers a number of scholarships varying in amounts from \$500 to \$1,000. Scholarships are open to qualified American and Canadian students who were born with a profound or severe hearing impairment or who lost their hearing before acquiring language skills, and have been accepted into a regular full-time college or university program. Interested students must request an application in writing before December 1 of the year previous to the one in which they intend to study. Please make inquiries to agbell2@aol.com. www.agbell.org

Arlene Burris Memorial Scholarship

The Arlene Burris Memorial Scholarship is awarded to a person studying in any field that will prepare him or her to work with children who are deaf or hard of hearing, or to an individual who is deaf or hard of hearing pursuing postsecondary studies. Application deadline is May 1. For more information please contact Programs for Students who are Deaf or Hard of Hearing,

Atlantic Provinces Special Education Authority, (902) 424-8500 (902) 424-8500 FREE or dhh@apsea.ca.

Canada Millennium Scholarship Program

The Canada Millennium Scholarship Foundation's Excellence Award Program provides scholarships to high school graduates entering their first year of full-time studies leading to a first postsecondary degree, certificate, or diploma. The excellence award program serves to recognize, support, and encourage talented Canadians who make positive and significant contributions to the betterment of communities across the country, who demonstrate capacity for leadership, and are committed to the pursuit of academic excellence and innovation. Applications are available at either the NSAC Awards Office or from the Millennium Scholarship website. The deadline for receipt of applications is January 15. www.millenniumschorships.ca

Canadian Forces Personnel Assistance Fund

Assistance is in place to assist serving and former members of the Canadian Forces and their dependents with costs of postsecondary education. To obtain the loan in time for the semester beginning September, submissions should arrive at CFPAP by June 30. Otherwise, applications will be accepted throughout the year until funds are exhausted. www.sisip.ca/English/Cfpaf_e

Co-Operators 4-H Scholarship

The Co-Operators 4-H Scholarship is a \$1,000 award presented to a student who is entering any year in a university, college, or other postsecondary educational institution. Candidates must be 16 years of age as of Jan 31, 2005, and must have been 4-H members for at least two years, and have been registered as 4-H members within the last five years. Selection will be based on personal background, goals and ambitions, community involvement, interest, and knowledge of accident prevention on the farm or in the home. A presentation to the selection committee and an interview will be required.

Candidates must submit the following by April 15 to the Provincial 4-H Office: application form, one reference letter, and a presentation in any medium (essay of 500-1000 words, double-spaced, typed or very neatly and clearly printed or written; video, speech, poster, etc.) with a theme of Farm Safety or Safety in the Home, focusing on accident prevention. Application details are available from the Provincial 4-H Office.

Co-op Alton McEwen Scholarship

Two university entrance awards of \$1,000 are open to employees and dependents of members of Co-op Atlantic. This is a four year renewable scholarship. Selection criteria include academic performance, demonstrated leadership ability, and interest in co-operation and co-operatives. The deadline is June 23.

www.co-opsonline.com/english/at_work/scholarships_mcewen.htm

Copnick/Hilliard Scholarship Fund

Each year, a \$1,000 award is provided to a Canadian postsecondary student with a severe mobility impairment. Applicants are responsible for ensuring that prior to the deadline the selection committee receives all necessary documentation, such as letters of reference and transcripts of the last two years of study. Applicants are encouraged to submit up to three letters of reference. Evidence of the applicant's disability status must be verified by a physician or other qualified health care professional (e.g. physician, rehabilitation counsellor, nurse, etc.) and submitted with the application. The deadline is August 31.

www.canparaplegic.org/national/index.html

Donald E. Curren Scholarship

The Donald E. Curren scholarships are open to mobility-impaired students who have been accepted by a university in the Atlantic Provinces, with preference given to applicants who are paraplegic or quadriplegic. Recipients must be Canadian citizens or landed immigrants and reside in the Atlantic Provinces. The deadline for receipt of the applications is July 31 of each year. www.canparaplegic.org

Datatel Scholars Foundation Scholarship

Datatel provides scholarship support for students currently attending an eligible Datatel Client college or university. NSAC is a client of Datatel. The application package will include a personal statement essay which should summarize educational goals and objectives, where the applicants have been as individuals, and where they hope their education will take them; they should also indicate the difference a Datatel scholarship would make in their life and to those around them. Scholarship amounts range from \$1,000-\$2,400, based on the undergraduate tuition at the college or university the applicant attends. www.datatel.com/dsf

Epilepsy Association of NS Memorial Scholarship/Bursary & the James Russell Kline Memorial Bursary

The EANS offers three \$500 bursaries. To be eligible, applicants must be Canadian citizens or landed immigrants resident in NS for at least twelve months who are under a physician's care for treatment of epilepsy, 18 years old by August 1 in the year of application, and accepted into a recognized postsecondary school. See the NSAC Awards Office for further details and application form. The deadline is May 15, 2005. www.epilepsyns.com.

Epilepsy Canada Scholarships

This initiative, which is funded by Lundbeck Canada Inc., will help 30 young people with epilepsy across Canada continue their college or university studies. Each of these students will receive an award worth \$1,000 applicable to the 2005/2006 academic year. The scholarship award program is open to all young people between the ages of 16 and 29, who are under the care of a Canadian physician for the treatment of epilepsy. www.epilepsy.ca

Fairfax Financial Holdings Ltd. Scholarship Program

The scholarship program has been developed to promote and encourage academic excellence and the pursuit of higher education in Canada. The program is targeted to university undergraduate programs and college diploma programs in any field of study. Candidates must be completing the first year of first university degree program or college technical diploma program, be in need of financial assistance, enrolled on a full-time basis, and have attained high academic standing. Duration of the scholarship is three years or until scholars obtain their first degree or diploma, whichever occurs first. The deadline is mid-July. www.aucc.ca/programs/scholarships/index_e.html

Farm Credit Corporation 4-H Scholarship

Farm Credit Corporation awards ten \$1,000 scholarships (one per province) to students in any year of any program of postsecondary study across Canada who had been registered 4-H members in the last five years. Applicants must submit a completed application which includes: general information, career plans, association involvement, and extracurricular involvement. In addition to the completed application form, applicants must submit a detailed plan for a community project that will either improve safety or reduce hunger in their community. Project plan should be a maximum of 3 typed pages in length. Project plans will be judged on completeness of plan, creativity, originality, spelling, and grammar. Application forms are due by February 28 to the Canadian 4-H Council.

Terry Fox Humanitarian Award Program

The program provides scholarships to students entering or attending postsecondary educational institutions within Canada. The successful applicants are recognized for dedication to community service, humanitarianism, perseverance and courage in the face of obstacles, and the pursuit of excellence in fitness and academics. The scholarship is a renewable award, subject to satisfactory progress. The value of each award is \$4,000 per year, for a maximum of four years or until first degree is obtained. The deadline for application submission is February 1. www.terryfox.org

Fredericton Scottish Rite Award

This \$500 award is given to students who are graduating from School Districts 10, 12, 13, 17 and 18 who have intellectual disabilities. The application deadline is April 15. For more information contact: Fredericton Scottish Rite Award, c/o Fredericton Association for Community Living, 1079 York Street, Fredericton, NB E3B 3S4.

Walter and Wayne Gretzky Scholarship Foundation for the Blind Youth of Canada

All applicants must be blind or severely visually impaired, graduating from a secondary school, and planning to pursue a full-time postsecondary course of study. The applicants must be Canadian citizens or have held landed immigrant status for one year prior to the date of application. In 2001, 15 scholarships were awarded at \$5,000 each. The selection committee will endeavor to select winners from the various regions of Canada. Applications to be received by June 30. Please make any inquiries to Walter and Wayne Gretzky Scholarship Foundation, (519)

458-8665 (519) 458-8665 FREE , or kohlerk@east.cnib.ca.

Harvest Trust 4-H Scholarships

Harvest Trust awards a \$1,000 scholarship to students who are entering a Degree program in Agriculture (one per province) who have been 4-H members within the last five years and active in the 4-H program for at least two years. Selection criteria include: personal background, goals and ambitions, financial need, community involvement and interest, and knowledge of agricultural issues. Applicants must submit an essay of 500-1000 words addressing one of the following topics:

- 1) We are living in a global economy. What can individual producers do to ensure Canadian products can compete in the competitive export markets?
- 2) How can producers become more pro-active in the marketing of agricultural products?
- 3) What action must producers and producer organizations take to ensure sustainable agriculture?
- 4) What effect does sustainable agriculture, animal welfare and environmental protection have on consumer attitudes and consumer consumption patterns?

Application deadline is April 15. For application details contact the Provincial 4-H Office.

Imperial Tobacco Scholarship Fund for Disabled Students

This program is used to help disabled Canadian students attend university. The award is \$5,000 for each student who is chosen (a minimum of 10 awards are offered each year). Persons applying for the award must be Canadian citizens or have lived in Canada for at least two years as legal permanent citizens. All applicants must be entering or currently enrolled in a first undergraduate program at a Canadian postsecondary institution. Recipients may re-apply. The deadline to apply is June 1. www.aucc.ca/programs/scholarships/imperial_e.html

Integration of Faith and Learning Student Essay Competition

The purpose of this award is to encourage Biblically-based Christian scholarship, reflection, and writing in a broad range of disciplines, including the sciences, arts, commerce, and technology. Examples of disciplines that may be considered are: Agriculture, Biology, Business, Chemistry, Education, Environmental Studies, Veterinary Science, etc. The award will be presented to an undergraduate student who best demonstrates the integration of Christian faith with academic studies, showing the practical application of faith. Application deadline is May 14, 2004. See NSAC Awards Office for further details. www.dal.ca/swmartin/iv_content.htm

Jamie Irving Memorial 4-H Scholarship

The \$1,000 Jamie Irving Memorial 4-H Scholarship is presented to a PEI student with a 4-H background entering a recognized postsecondary institution. Selection criteria include: 4-H background, community involvement, goals and ambitions, an interview, and an essay. Application deadline is April 15.

Judge Brian Stevenson Scholarship Fund

The fund will make scholarship awards from \$300 to \$500 available to legally blind Canadians with strong career aspirations who are pursuing postsecondary studies. The forms must be

completed in full and returned before September 30. Application forms are available from CNIB Divisional Offices or for more information: Judge Brian Stevenson Scholarship Committee, W. Ross Macdonald School, 350 Brant Avenue, Brantford, Ontario N3T 3J9. Phone (519) 759-0730

(519) 759-0730 FREE .

Mattinson Endowment Fund Scholarship for Disabled Students

This program is to encourage Canadian students with a disability to obtain a first university degree. The award is \$2,500 (the number awarded each year will be based on the funding available for that year). Applicants must be Canadian citizens or have lived in Canada for two years as legal permanent citizens. All applicants must be entering or currently enrolled in a first undergraduate program at a Canadian postsecondary institution. Recipients may re-apply. Deadline to apply is June 1. www.aucc.ca/programs/scholarships/mattinson_e.html

Monsanto Canada Inc. Scholarships

Monsanto Canada Inc. awards sixty \$1,500 scholarships to high school students from across Canada entering the first year of Agriculture (any discipline), Forestry, Agri-Science, or Management (Marketing/Finance) programs (degree or diploma) at a Canadian educational institution. Students from an agricultural or forestry family farm are eligible. Selection criteria include academic performance and leadership in the community. Application forms are available

on the website. Graduating high school students having questions can call 1-800-667-4944 1-800-667-4944 FREE . Application forms must be post-marked not later than July 15, 2005. www.farmcentral.com

National Bank of Canada Bursary and Summer Employment Program

National Bank of Canada is proud to announce its 15th annual Bursary and Summer Employment Program for University and CEGEP Students with Physical or Sensory Disabilities to help them pursue their studies and gain work experience in a field related to their studies. Under the Program, the Bank awards two \$2,000 bursaries together with a paid 12-week summer job for university students and one \$1,000 bursary together with a paid 10-week summer job for CEGEP students. Program information and application forms are available on the website. Application deadline is March 5. www.nbc.ca/bursary

National Federation of the Blind: Advocates for Equality Scholarship Program

The National Federation of the Blind: Advocates for Equality Program offers three scholarships of \$1,500 each to recognize outstanding blind scholars in Canada. All applicants must be legally blind residents of Canada who are pursuing or planning to pursue a full-time college or university education. For more information please contact National Federation of the Blind

Advocates for Equality, 1-800-561-4774 1-800-561-4774 FREE . The application deadline is March 1.

New Brunswick Fruit Growers' Association Scholarship

The \$300 New Brunswick Fruit Growers' Association Scholarship is awarded to an NB resident entering a program of study in horticulture or related courses at an agricultural college or university with the purpose of returning to, or working in, the New Brunswick tree fruit industry. Selection criteria include: academic performance, involvement in community activities, volunteer work, farming or orchard experience, interests in the fruit-growing industry, and future career plans. Applications must be submitted not later than September 30 to: NBFGA Scholarship Committee, 1115 Regent Street, Suite 206, Fredericton, NB E3B 3Z2

NS Department of Agriculture and Fisheries 4-H Scholarships

The Nova Scotia Department of Agriculture and Fisheries awards four \$1,000 scholarships to students with Nova Scotia 4-H backgrounds entering a Bachelor's program at a recognized university. At least one scholarship will be presented to a student enrolling in the first year of an agricultural or vet science program. Applicants must submit an essay of 2500-4000 words on the topic "The Importance of Nova Scotia's Agriculture" and a transcript of their marks with their application by April 15.

Nova Scotia 4-H Council Scholarship

The Nova Scotia 4-H Council awards a \$1 000 scholarship to a student with a Nova Scotia 4-H background entering postsecondary study. Applicants must provide a 1500-word essay on "How I Have Benefited from My 4-H Career" to accompany their application by April 15.

Nova Scotia Fruit Growers' Association Scholarship

The Nova Scotia Fruit Growers' Association awards a \$500 bursary to a student entering or already in a postsecondary education program in the field of Tree Fruit Production, or a related science program which might include the following: Biology, Chemistry, Food Science, Plant Science, Environmental Science, or Business or Agri-Business. Selection criteria include academic achievement, participation in school and community activities, and interest in the tree fruit industry. Applications, including a resume, university/college acceptance letter or transcript, and an essay outlining career and life goals, must be received no later than May 31 by: Education Committee, NS Fruit Growers' Assoc., Blair House, 32 Main Street, Kentville, NS B4N 1J5

Nova Scotian Institute of Science Mentorship Program

This mentorship program is aimed at university students (undergraduate and graduate) seeking guidance regarding their career opportunities in science. For more information or to arrange for a mentor, e-mail sean.tibbetts@nrc-cnrc.gc.ca. www.chebucto.ns.ca/Science/NSIS/index.html

Nova Scotian Institute of Science Student Science Awards

This competition is open to any graduate or undergraduate student currently enrolled in a degree program at a recognized educational institution in NS. A total of \$1,500 in prizes is available, as well as the opportunity to have work published in a peer-reviewed scientific journal. Intent-to-submit deadline is January 15, 2005; submission of article February 25, 2005. Further details are available on the website or from the NSAC Awards Office. www.chebucto.ns.ca/Science/NSIS/index.html

Bruce Pettipas Memorial Agricultural Scholarship

The Maritime Beef Testing Society, Nappan, NS, offers a \$500 bursary to a student from the Maritime Provinces entering a first year of a degree or technical program at a recognized Maritime university or college, or any agricultural institution requiring tuition. Preference will be given to those persons entering an Agricultural degree program and those persons majoring in an Animal Science program. Application deadline is May 1. See the NSAC Awards Office for application form and other details.

Phoenix Rotary Equipment Conservation Tillage Essay Contest

This contest is open to high school seniors and college students. Essays must be 700 to 1,000 words long and must pertain to some aspect of conservation tillage (e.g. no-till, zero-till, direct seeding, mulch-till or ridge-till). Judging will be based on demonstrated knowledge of no-till practices as well as coherence, clarity, creativity, details, examples, grammar, vocabulary and spelling. Application deadline is in November. See the website or the NSAC Awards Office for further details. www.phoenixrotary.com

Prince Edward Island 4-H Council Scholarship

The PEI 4-H Council awards a \$1,000 scholarship to a student with a PEI 4-H background who is entering postsecondary study. Selection criteria include: knowledge of 4-H history, community involvement, goals and ambitions, an essay, and an interview. Further information is available from PEI high school guidance counsellors. The deadline is April 15.

P.E.I. Mutual Education Trust Fund Centennial Scholarship

Twenty \$450 entrance scholarships are available to PEI students who are attending any postsecondary institution. Selection criteria are based on academic performance and financial need. Students are encouraged to check with high school guidance counsellors. The deadline is May 31. www.rbcroyalbank.com/lifeskills

Provincial Artisans (Fredericton) Inc. Bursaries

Several annual bursaries totalling \$10,000 are being funded by Provincial Artisans (Fredericton) Inc. To qualify for these awards a student must have a disability, be entering or currently enrolled in a postsecondary institution, and a resident of New Brunswick. The deadline to apply is May 31. www.provart.net

Rotary Club of Truro Postsecondary Entrance Educational Bursary

The Rotary Club of Truro offers two \$1,500 postsecondary entrance educational bursaries to students wishing to pursue postsecondary studies at a college or university. The bursaries are tenable only at recognized postsecondary institutions and are awarded to students who reside in the geographic area served by the Rotary Club of Truro, NS. These are non-renewable bursaries. Selection criteria include: academic standing, community involvement, and need. Application deadline is May 1.

Royal Canadian Legion Bursaries/Scholarships

Awards are available to Grade 12 students entering first-year studies at university, community college, or trade school. Bursaries/Scholarships offered: Nova Scotia/Nunavut Command Bursary; Jack Moore Memorial Dominion Command Bursary; LAC Bursary; Wales Scholarship (for students with disabilities); Elsie Jean Lambert Scholarship; Halifax Poppy Fund Bursary. Applications can be found on the website or at the NSAC Awards Office. All forms must be submitted in the same envelope by July 15. www.ns.legion.ca

Sport Nova Scotia Excellence in Action Scholarships

The Excellence in Action Scholarship was created by Sport Nova Scotia and the Medical Society of Nova Scotia, in an effort to support and recognize the training and competition efforts of NS athletes with disabilities who are entering degree or diploma programs at postsecondary institutions. Application deadline is September 1. www.sportnovascotia.ca/contents/upcoming_events/excellence.htm

TD Canada Trust Scholarships

Twenty TD Canada Trust Scholarships are awarded, honouring Canadian high school students for outstanding community leadership. The scholarships, worth \$50,000, include full tuition to a Canadian university or college, an extra \$3,500 a year for living expenses, and summer employment at TD Canada Trust for up to four years. www.tdcanadatrust.com/scholarship/index.jsp

TD 4-H Agriculture Scholarships

TD Bank Financial Group and the Canadian 4-H Council sponsor up to ten \$2,000 scholarships for 4-H members in their last year of high school who are planning to enroll in postsecondary education in a discipline related to agriculture or agri-business. Applications including a transcript of marks must be received at Canadian 4-H Council by October 3.

www.4-h-canada.ca/scholarships.html

Carol Thomson Memorial Fund

This award is to recognize a student with a learning disability seeking to use his or her potential to its maximum. One scholarship, valued at \$1,000, is awarded annually to a student attending a Canadian postsecondary institution. Deadline to apply is May 15. www.ldac-taac.ca

Toyota Earth Day Scholarship Program

Earth Day Canada and Toyota Canada offer a new and unique scholarship program that celebrates and rewards environmentally-minded students. Students must be entering first-year, full-time postsecondary studies in any chosen discipline. The program offers ten awards of \$5,000 or other educational expenses. Application deadline is January 31, 2005. www.earthday.ca/scholarship

Young Canada Works

Each year Young Canada Works (YCW) creates approximately 2650 jobs for students and young graduates. YCW supports four summer job programs for students and two internship programs for unemployed or underemployed college and university graduates. Youth and employers can get more information and can apply on the website. www.youngcanadaworks.gc.ca

Youth Entrepreneurship Scholarship (YES)

YES is a scholarship initiative that recognizes Nova Scotia's student entrepreneurs who create their own summer jobs by operating full-time summer businesses. The Province of NS encourages youth to create their own summer jobs and to consider business and entrepreneurship as a career option. \$1,000 scholarships are available to full-time students who are 16-29 years old, NS residents, planning to attend high school or a recognized postsecondary institution this fall, and thinking about running their own business during the summer. Application deadline is June 30. www.gov.ns.ca/econ/yes/

Wales Scholarship

The Wales Scholarship is a \$6,000 annual scholarship fund provided by the Province of NS to commemorate the wedding of the Prince and Princess of Wales. The annual fund is administered by the Nova Scotia/Nunavut Command of the Royal Canadian Legion. To be considered you must be a Nova Scotian with a disability, starting or continuing postsecondary education in NS, and ineligible to receive assistance under the Employability Assistance for People with Disabilities (EAPD) Program. For application details see the website or the NSAC Awards Office. Application deadline is July 15 for awards for the upcoming academic year. nsabcu.EDnet.ns.ca or www.ns.legion.ca

Robert Walker Memorial Scholarship

Established in 1975 as a memorial to Robert Walker, who lost his life in a farm accident, scholarships are awarded to students from NB entering a first year of postsecondary study. Applicants must have been active 4-H members in the Southern District in NB, with a farm background. Application information is available from NB Department of Agriculture, Fisheries

and Aquaculture, 701 Main St., Box 5305, Sussex, NB E4E 7H7. Phone (506) 432-2150 (506) 432-2150 FREE, Fax (506) 432-2044.

Wanderer's Amateur Athletic Scholarship

This award is open to students who have had an injury leading to paraplegia or quadriplegia, who have been accepted at a postsecondary institution in the Atlantic Provinces. Applicants must be Canadian citizens or landed immigrants residing in Atlantic Canada prior to applying.

The deadline is July 31. For more information e-mail Halifax@canparaplegic.org.
www.canparaplegic.org/ns

Western District (NB) Grain Growers Scholarship

This \$300 scholarship is awarded to a student currently registered in the 4-H Program in the Western District of New Brunswick, entering postsecondary study in the fall. Selection criteria include: financial need, academic record, and 4-H involvement. Application information is available from the New Brunswick Provincial 4-H office.

Garfield Weston Merit Scholarship for Colleges

The Garfield Weston Merit Scholarship for Colleges program provides up to 50 national awards worth up to \$8,000 per year (renewable for up to four years of study). National award winners can choose to attend any one of the participating colleges. NSAC is a participating college. There are also 30 regional entrance awards valued at \$4,000 and up to 25 provincial entrance awards valued at \$2,500 for use at any accredited community college in Canada. Applicants must be either Canadian citizens or landed immigrants, and be in a recognized diploma program leading to a first diploma or certificate to be eligible at an approved Canada postsecondary educational institution. At NSAC, students entering two- and three-year Technical programs and the Pre-Vet or Engineering diploma programs are eligible. Participating colleges agree to provide a tuition waiver to any of the national award holders wishing to attend the institution. Application deadline is February 13. www.gwmsc.ca

F.J.L. Woodcock/Sir Arthur Pearson Association of War Blinded Scholarship Fund

Students who have no better than 20/70 vision after corrections and who are continuing either their vocational or academic education at the postsecondary level are eligible to apply for a scholarship. Students should have a high degree of motivation and a reasonable level of achievement, and find the scholarship of assistance. Completed applications must be received at the SAPA National Office by May 1. www.cnib.ca

Zonta Club of Truro Bursary

The Zonta Club of Truro, NS, area has established a \$1,000 bursary open to women of mature status who are attending or plan to attend a program of postsecondary education. A woman of mature status is defined as one who has been out of secondary school for five or more years. The bursary's purpose is to provide incentive for further education to mature women who need financial assistance. The program of further education needs to be at least two semesters' duration. Selection criteria include having qualifications for admission to chosen program, having a defined education goal, having made arrangements for looking after family/dependent responsibility, and being highly motivated to change lifestyle (volunteered in chosen field). See the NSAC Awards Office for further application details. The deadline is May 31.

Zonta Club of Truro High School Bursary

The Zonta Club of Truro, NS, area offers two \$1,000 bursaries to women graduating from Grade 12 in the five high schools of the former Colchester-East Hants District School Board. Selection criteria include reason for selecting chosen program of study and financial need. See the NSAC Awards Office for application details. The deadline is May 31.

VII. Other Continuing External Scholarships and Bursaries

(Although not exclusive to NSAC students, the following scholarships/awards are available to students studying at NSAC.)

Agriculture and Agri-Food Canada Scholarship Program

The objective of the program is to provide incentives to encourage more students to pursue graduate degrees in agriculture and agri-food-related disciplines so as to promote the development of sufficient expertise in the agri-food sector. Graduate studies may be in the following areas: agri-food marketing and trade; agri-biotechnology; environmentally sustainable agricultural production systems; food technology; industrial uses of agricultural commodities; and info technology related to agriculture and agri-food. Scholarship amounts are \$15,000 at the Master's level with a possibility to renew for one additional year, and \$17,000 at the Ph.D. level. Nominations must be received by July 2.

Animal Nutrition Association of Canada Graduate Scholarship

\$1,000 ANAC Graduate Scholarships are awarded to Canadian university graduate students (including landed immigrants) enrolled in Animal Science or a related field of study, with a specific interest (research project/course selection) in animal nutrition. Applications must include a completed ANAC scholarship application form; a resume; a reference from the applicant's university department advisor and/or department head; a one-page report detailing how new developments in the field of animal nutrition might challenge, benefit or change the focus of the feed industry either regionally (East/West) or in Canada; and a list of nutrition-related courses completed (with final grade) and currently enrolled in (this can be in the form of an official transcript, or a list signed by the applicant's academic advisor). See the NSAC Awards Office for further details. The deadline for the Eastern competition (for applicants from universities east of the Ontario/Manitoba border) is January 31, 2004 .

Aquaculture Association of Canada Scholarship

Six \$1,000 scholarships will be awarded annually to AAC student members enrolled in a postsecondary institution in an aquaculture-related program. Selection is based on scholastic ability (transcript of marks); interest and involvement in aquaculture (e.g. summer employment); publication record, if any; and a 250-word essay on where the applicant sees him/herself contributing to sustainable aquaculture development in the future. Application deadline is November 15, 2005. See the NSAC Awards Office for further details.

Association of Nova Scotia Housing Authorities

Several \$1,000 renewable awards are awarded to Nova Scotia residents who live in housing units administered by a Nova Scotia Housing Authority, and who need financial assistance to enable them to continue their education at a postsecondary level (e.g. university, community college, trade school, or technical school). Awards are tenable at any legally recognized educational institution chosen by the applicant and approved by ANSHA. Application deadline is May 1 each year. Information and application forms are available from: ANSHA Student Awards Committee, Box 753, Amherst, NS B3H 4B9

Dr. Kim Beck Memorial Scholarship

The Turkey Farmers of New Brunswick Marketing Board awards a \$500 scholarship in memory of Dr. Kim Beck. The scholarship will be awarded annually to an NB resident who is enrolled in a postsecondary agricultural program. Selection will be based on academic achievement, financial need, involvement in agriculture, and interest in the poultry or food industry. Applications must be received by October 31.

Canadian Association of Diplomas in Agriculture Programs (CADAP) Bursaries

The Canadian Association of Diplomas in Agriculture Programs (CADAP) is an organization of postsecondary educational institutions offering diploma programs in agriculture. Its membership consists of institutions from across the country with a variety of programs emphasizing the agriculture of their region. To enable students from member institutions to

benefit from the diversity in programs, the geographical variation and the differing cultural backgrounds, CADAP will be offering, annually, \$1,000 bursaries for two students from two different CADAP institutions to participate in an exchange between member institutions. Duration of the exchanges will be either one or two semesters or practical experience work sessions of at least 12 weeks. Students wishing to participate should make their interests known to the NSAC Vice-President Academic by December 15.

Canadian Co-operative Association Scholarships

Graduate and undergraduate students are invited to apply for scholarships supporting research in co-operatives and co-operation which will contribute to the co-operative movement in Canada or abroad. Application deadlines are March 1 and June 30.
www.coopscanada.coop/Links/awards.html

Canadian Federation of University Women (Truro Branch) Scholarship

Scholarships are awarded to mature women over the age of 25 attending a degree granting university or college on a full-time basis. Applicants must be Canadian citizens who are residents of the town of Truro or the County of Colchester in Nova Scotia. The applicants must have been out of school for at least five years before embarking on their present program of study. A candidate is eligible to apply during any year of a degree-granting program. If still eligible, an applicant may re-apply for this scholarship if the application for the previous year was unsuccessful. Application deadline is May 15.

Canadian Forces Personnel Assistance Fund

Assistance is in place to assist serving and former members and their dependents with costs of postsecondary education. To obtain the loan in time for the semester beginning September, submissions should arrive at CFPAF by June 30. Otherwise, applications will be accepted throughout the year until funds are exhausted. www.sisip.ca/English/Cfpaf_e

Canadian Golf Superintendents Association Scholarships

The Canadian Golf Superintendents Association supports CGSA member students attending educational programs as a means of enhancing their knowledge and skills for the turf grass profession. The Scholars Fund is available to those currently enrolled in at least the second semester of a recognized turf grass program of two years duration or longer. Selection criteria include academic performance, financial need, and the content of the application which demonstrates the applicant's interest in the field of turf grass as a career. Applications are due by November 30 at: Canadian Golf Superintendents Association, 5580 Explorer Dr., Suite 509, Mississauga, ON L4W 4Y1

Canadian Western Agribition Scholarships

Several \$1,000 scholarships are awarded to students who have participated in Canadian Western Agribition as Exhibitors. Applicants must have completed at least one year of postsecondary study to be eligible. Application deadline is July 1.

Florence M. Christie Memorial Bursary for Women

The Greater Saint John Community Foundation awards annual \$1,500 scholarships to women of Saint John, NB. Applicants must be mature female students (i.e. out of high school at least one year), with demonstrated financial need, entering or returning to full- or part-time studies at a post-secondary institution in September. The bursary must be applied to tuition. High academic standing is not a requirement. The application must include the completed application form, a statement of income and expenses, three letters of reference, a transcript of marks, volunteer experience/school participation, and future goals. Application deadline is March 28.

Dalton Camp Award

The Dalton Camp Award offers up to three \$5,000 prizes to the winners of an essay contest on the theme of the media's contribution to democracy in Canada. Application deadline is March 31, 2005. www.friends.ca/DCA

Donald Cummings Apprenticeship and Industry Training Scholarships

This award is given to a student with a learning disability (for this award ADD is not considered a learning disability) who is enrolled in a trade program and has at least one period of technical training left to complete. Deadline to apply is May 15. www.ldac-taac.ca

Dairy Farmers of New Brunswick Scholarship

The Dairy Farmers of NB offer a \$750 scholarship to an NB resident who is enrolled in any year of an approved technician or technology diploma or certificate program relating to agriculture. Application deadline is June 27. For further details contact marilyn@nb.milk.com.

Dairy Farmers of New Brunswick Memorial Scholarship

The Dairy Farmers of NB offer a \$750 scholarship to an NB resident who is enrolled in a recognized postsecondary agricultural program who has been accepted into the first year of an approved agricultural program. For further details contact marilyn@nb.milk.com.

Datatel Scholars Foundation Scholarship

Datatel provides scholarship support for students currently attending an eligible Datatel Client college or university. NSAC is a client of Datatel. The application packages will include personal statement essays which should summarize educational goals and objectives, where the applicants have been as individuals, and where they hope their education will take them. They should also indicate the difference a Datatel scholarship would make in their life and to those around them. Scholarship amounts range from \$1,000 to \$2,400, based on the undergraduate tuition at the college or university the applicant attends. Details are available on the website. www.datatel.com/dsf

Entomological Society of Canada Post Graduate Awards

The Society offers two \$2,000 postgraduate awards to students in study and research leading to a postgraduate degree in entomology (one to an M.Sc. student and one to a Ph.D. student). Awards will be made on the basis of high scholastic achievement and scientific merit. Students must be enrolled as full-time graduate students at Canadian universities and be pursuing scientific studies on insects or other related terrestrial arthropods. esc-sec.org/form.htm

Farm Credit Corporation 4-H Scholarship

Farm Credit Corporation awards ten \$1,000 scholarships (one per province) to students across Canada in any year of any program of postsecondary study, who had been registered 4-H members in the last five years. The application includes general information, career plans, association involvement, and extracurricular involvement. In addition to a completed application form, applicants must submit a detailed plan for a community project that will either improve safety or reduce hunger in their community. The project plan should be a maximum of three typed pages in length. Project plans will be judged on completeness of plan, creativity, originality, spelling, and grammar. Application forms are due by April 1 to the Canadian 4-H Council.

Terry Fox Humanitarian Award Program

The program provides scholarships to students entering or attending postsecondary educational institutions within Canada. The successful applicants are recognized for dedication to community service, humanitarianism, perseverance and courage in the face of obstacles, and

the pursuit of excellence in fitness and academics. The scholarship is renewable, subject to satisfactory progress. The value of each award is \$4,000 annually, for a maximum of four years or until the first degree is obtained. Deadline for applications is Feb 1. www.terryfox.org

Fredericton Scottish Rite Award

This \$500 award is given to students graduating from School Districts 10, 12, 13, 17 and 18 who have intellectual disabilities. Application deadline is April 15. For more information contact Fredericton Scottish Rite Award, c/o Fredericton Association for Community Living, 1079 York Street, Fredericton, NB E3B 3S4.

Imperial Tobacco Scholarship Fund for Disabled Students

This program is used to help Canadian disabled students attend university. The award is \$5,000 for each student who is chosen (a minimum of 10 awards are offered each year). Persons applying for the award must be Canadian citizens or have lived in Canada for at least two years as legal permanent citizens. All applicants must be entering or currently enrolled in a first undergraduate program at a Canadian postsecondary institution. Recipients may re-apply. Deadline to apply is June 1. www.aucc.ca/programs/scholarships/imperial_e.html

Keith Gilmore Foundation Scholarships

Four \$1,500 scholarships are offered to individuals in an undergraduate or post-graduate degree program in agriculture, journalism or communications at a recognized university. The successful applicant will already have completed a minimum of one year in his/her major field of studies. Three \$750 scholarships are offered to individuals enrolled in a recognized diploma program in agriculture and/or journalism or communications. The successful applicant will have already completed a minimum of one year in a diploma program. Applications are available at the NSAC Awards Office and should be submitted not later than July 1 to The Keith Gilmore Foundation, 5160 Skyline Way N.E., Calgary, Alberta T2E 6V1.

John Gyles Education Awards

The John Gyles Education Awards are available each year to students in both Canada and the United States. Full Canadian or American citizenship is a requirement. Awards are available to both male and female students for all areas of postsecondary study. A minimum GPA of 2.7 is required. Criteria other than strictly academic ability and financial need are considered in the selection process. Selected students will receive up to \$3,000. Filing dates for mailing applications are April 1, June 1 and November 15. To receive an application send only a stamped self-addressed envelope to: John Gyles Education Awards, Attention: The Secretary, P.O. Box 4808, Sta. A, Fredericton, NB E3B 5G4

Hants County Exhibition Scholarship

This \$1,000 scholarship is sponsored by the Windsor Agricultural Society. Applicants must be residents of Hants County, NS, entering any year of any program at a recognized agricultural or veterinary college and have aspirations of working in the agricultural industry. Selection criteria include academic performance, extracurricular activities, part-time employment, and career plans. Copy of transcript and application form must be received by August 26 at: Windsor Agricultural Society, Box 368, Windsor, NS B0N 2T0

Anna Helvig Schousboe Scholarship

This \$300 scholarship is awarded to a resident from Kings County, NB, who is working towards a degree or diploma in Agriculture, Veterinary Medicine, or Home Economics at a postsecondary institution. Application deadline is September 20. Application information is available at the NSAC Awards Office.

Holstein Association of Canada Scholarships

Holstein Canada offers three \$1,000 university (degree) scholarships and three \$500 college/university (diploma) scholarships to postsecondary students in Canada. Applicants must be regular or junior members of Holstein Canada, or children of members; must have completed at least one year of university/college; must submit an official, original transcript of the two most recent semesters; and must be returning to school within the calendar year. Log onto the website for further information, or see the NSAC Awards Office for an application form. Application deadline is October 15. www.holstein.ca/english/Youth/edaward.asp

Integration of Faith and Learning Student Essay Competition

The purpose of this award is to encourage Biblically-based Christian scholarship, reflection, and writing in a broad range of disciplines, including the sciences, arts, commerce and technology. Examples of disciplines that may be considered are: Agriculture, Biology, Business, Chemistry, Education, Environmental Studies, Veterinary Science, etc. The award will be presented to an undergraduate student who best demonstrates the integration of Christian faith with academic studies, showing the practical application of faith. Application deadline is May 14. See the NSAC Awards Office for further details. www.dal.ca/ www.dal.ca/swmartin/iv_content.htm

Ivomec 4-H Youth Scholarship

The \$1,000 Ivomec 4-H scholarships are awarded to students in any year of postsecondary study who have been 4-H members for at least two years (registered within the last 5 years). As part of the selection process, applicants will be judged on their degree of community and volunteer involvement. Additionally, all applicants are required to submit a presentation in any medium (essay of 500-750 words, video, speech on audio-cassette, poster, etc.) based on the following statement:

- What is the future of branded consumer meat products in Canadian livestock production?
 - How will this development impact the way producers raise and market livestock?
- Applications (accompanied by essay, video, audiocassette, or poster) must be received by the Canadian 4-H Council office not later than May 15.

Arlen Kerr Memorial Scholarship

The Canada Mink Breeders Association awards a \$2,000 renewable scholarship to Canadian graduate students engaged in mink research attending any Canadian university or veterinary college. Applicants should submit their education profiles and research proposals by January 15 to: Karlene Hart, Executive Secretary, Canada Mink Breeders Association, 65 Skyway Ave., Suite B, Rexdale, ON M9W 6C7

Kinsman and Kinettes Bursaries

The Hal Rogers Endowment Fund provides \$1,600 bursaries to full-time Canadian students demonstrating financial need, extracurricular involvement, high ideals, and qualities of citizenship who have not already received a bursary from the Hal Rogers Endowment Fund. Deadline is February 1. www.kinclubs.ca

The Leonard Foundation

The Leonard Foundation offers financial assistance to university students who are experiencing specific financial difficulties. Full-time students who are enrolled in an undergraduate or first professional degree program in a recognized Canadian college or university (AUCC) are eligible. All applicants will be considered but preference will be given to sons and daughters of clergy, teachers, military personnel, graduates of Royal Military College, members of the Engineering Institute of Canada, and members of the Mining and Metallurgical Institute of Canada. The

amount of assistance may vary depending on the applicant's financial situation, but on average will be in the amount of \$1,250. Applications must be submitted and an interview arranged with the Nominator nearest you (listed on insert in application) by March 15. Applications for the Leonard Foundation scholarships are available from: The Provincial Nominator, The Leonard Foundation, 1774 Pryor St., Halifax, NS B3H 4G8
www.leonardfnd.org/

Terry MacDonald Memorial Scholarship

This scholarship is awarded to a Southern District, NB 4-H member from a farm family, who is entering or enrolled in postsecondary study. Application deadline is July 31. An interview is part of the application process. Applications are available from: Ron Menzies, RR #4, Norton, NB EOG 2N0

C.C. MacDougall Scholarship

This \$250 scholarship is awarded to a student pursuing a degree or diploma in Agriculture, Home Economics, or Veterinary Medicine. To be eligible, students must have been 4-H members from Kings County, NB, or have parents who raise or breed Guernseys anywhere in NB. Application information is available from NB Department of Agriculture, Fisheries and Aquaculture, Sussex Provincial Bldg., 707 Main St., Box 5305, Sussex, NB E4E 7H7. Phone (506)

432-2150 (506) 432-2150 FREE , Fax (506) 432-2044.

Maritime Dairy Industry Scholarship

Two individual scholarships of \$2,000 will be awarded. Students eligible to apply for this scholarship include any student currently attending a postsecondary education institution within Canada who has completed at least three years of study in a program that has application to the dairy industry, and is a resident of NS, NB, or PEI. Applicants must show professional and academic promise and a commitment and interest in the dairy industry. Applicants must submit a completed application form, a one-page letter stating their commitment and interest in the dairy industry, an official transcript of marks for completed years in postsecondary education, and three reference letters (at least one from a professor). Selection criteria will be based on application requirements, academic standing, and potential contribution and commitment to the dairy industry. Applications must be submitted by January 31 to: The Maritime Dairy Industry Scholarship Committee, c/o Milk Maritime Inc., 191 Halifax Street, Suite 3, Moncton, NB E1E 4E1

Douglas McRorie Memorial Scholarships

The Royal Bank Financial Group Foundation sponsors the Agricultural Institute of Canada Foundation (AICF) Douglas McRorie Memorial Scholarship, in recognition of the significant contribution Douglas McRorie, P.Ag, made to agricultural finance through his career with the Royal Bank and his professional involvement with the Agricultural Institute of Canada and AICF. The six annual \$1,500 scholarships provide financial support to postgraduate Master's program students specializing in agricultural business, finance, or trade. The scholarship is tenable for full-time study in the 2005/2006 academic year at any Canadian university with an agricultural program accredited by the Agricultural Institute of Canada. Scholarship criteria (not necessarily in order of importance) include academic achievement, areas of study, leadership, and career interests. Application deadline is October 17. Additional information is available on the AICF website or by contacting: Education Committee, Agricultural Institute of Canada Fdn., 141 Laurier Ave West, Suite 1112, Ottawa, ON K1P 5J3. www.aic.ca/aicf/initiatives.html

Mattinson Endowment Fund Scholarship for Disabled Students

This program is to encourage Canadian students with a disability to obtain a first university degree. The award is \$2,500; the number awarded each year will be based on the funding available for that year. Applicants must be Canadian citizens or have lived in Canada for two years as legal permanent citizens. All applicants must be entering or currently enrolled in a first undergraduate program at a Canadian postsecondary institution. Recipients may re-apply. Deadline to apply is June 1. www.aucc.ca/programs/scholarships/mattinson_e.html

John Miller Memorial Bursary

The \$500 John Miller Memorial Bursary is awarded to an NS student in any year of any program at any agricultural university/college in Canada, whose course and project work and career plans reflect an interest in the hog industry or whose application shows interest, understanding and appreciation for Nova Scotia's hog industry. The bursary is in memory of John Miller who served as Secretary/Manager of Pork Nova Scotia from 1983 to 1997. Applications must be submitted to the NSAC Awards Office not later than September 30.

Mine Action Student Essay Competition

Canada is committed to ensuring that the Ottawa Convention banning anti-personnel mines is universally accepted and effectively implemented. You can help offer your ideas through a student essay competition sponsored by the Canadian Department of Foreign Affairs and International Trade. The competition is open in a wide range of disciplines including social sciences, health sciences, humanities, and natural sciences. No prior knowledge of the land mines issue is required. Successful applicants will receive a \$1,000 award and an opportunity for publication of their papers. Further details and application form are available on the website. www.mines.gc.ca

National Association of United Church Men's Clubs

The National Association of United Church Men's Clubs provides a \$1,000 scholarship to a student of agriculture, fisheries, and/or food sciences who is interested in serving on the international scene. The Harry Colnett Scholarship is designed to encourage students to prepare for service in international agriculture and education, particularly in projects related to the production and distribution of food in developing countries. NSAC students who have taken the Tropical Agriculture course should make good candidates for this award. Application deadline is February 22.

New Brunswick Institute of Agrologists Scholarship

The New Brunswick Institute of Agrologists awards a \$1,000 scholarship to an NB student who is entering the third year of a degree course in Agriculture at a recognized Canadian agricultural education institution. Selection criteria include academic performance, participation in extracurricular activities, and financial need. Applications must be submitted not later than October 1 to: Registrar, New Brunswick Institute of Agrologists, PO Box 3479, Station B, Fredericton, NB E3A 5H2. www.nbagrologists.nb.ca/Awards.htm

New Brunswick Milk Marketing Board Scholarship

The NB Milk Marketing Board awards a \$750 scholarship to an NB resident who is enrolled in a technician or technology diploma or certificate program related to agriculture and the dairy industry at a recognized agricultural or community college. Selection is based on financial need, academic achievement, participation in community activities and future plans. Application deadline is July 3.

Nova Scotia Fruit Growers' Association Scholarship

The Nova Scotia Fruit Growers' Association awards a \$500 bursary to a student entering or already in a postsecondary education program in the field of Tree Fruit Production or a related

science program which might include Biology, Chemistry, Food Science, Plant Science, Environmental Science, or Business or Agri-Business. Selection criteria include academic achievement, participation in school and community activities, and interest in the tree fruit industry. Applications, including a resume, university/college acceptance letter or transcript, and an essay outlining career and life goals, must be received not later than May 31 by: Education Committee, Nova Scotia Fruit Growers' Association, Blair House, 32 Main Street, Kentville, NS B4N 1J5

Nova Scotia Salmon Association Scholarships

The Nova Scotia Salmon Association annually awards \$500 scholarships to Nova Scotia residents who enhance or who propose to enhance by any endeavour the well-being of the Atlantic Salmon. For example, an applicant may:

1. have undertaken or be in the process of undertaking scholarly pursuit related to the enhancement or conservation of the Atlantic Salmon;
2. propose to publish or have published an article or scientific paper in any field which furthers enhancement of the Atlantic Salmon;
3. promote the cause of the Atlantic Salmon by outstanding leadership or participation;
4. be engaged in the endeavours of an Association which results in the conservation of the Atlantic Salmon.

Deadline for applications is March 12. Applications should be submitted to the Chair of the Scholarship Committee, NSSA, Box 470, Port Williams, NS B0P 1T0

Nova Scotia Fur Institute Scholarship

The Nova Scotia Fur Institute awards a \$2,500 scholarship to a graduate in Animal Science from NSAC who is pursuing graduate studies in fur production at an approved university. Selection will be based primarily on academic performance. Applications must be submitted not later than March 31 to: Chairman, Nova Scotia Fur Institute, Nova Scotia Agricultural College, Box 550, Truro, NS B2N 5E3

Nova Scotian Institute of Science Mentorship Program

This mentorship program is aimed at university students (undergraduate and graduate) seeking guidance regarding their career opportunities in science. For more information or to arrange for a mentor, email sean.tibbetts@nrc-cnrc.gc.ca. www.chebucto.ns.ca/Science/NSIS/index.html

Nova Scotian Institute of Science Student Science Awards

Competition is open to any graduate or undergraduate student currently enrolled in a degree program at a recognized educational institution in NS. A total of \$1,500 in prizes is available, as well as an opportunity to have work published in a peer-reviewed scientific journal. Intent-to-submit deadline is January 15, 2005; submission of article February 25, 2005. Further details are available on the website or from the NSAC Awards Office.

www.chebucto.ns.ca/Science/NSIS/index.html

Poultry Industry Council Grad-Ship Program

The Poultry Industry Council Grad-Ship Program encourages graduates to undertake research and training at the post-graduate level at universities and research institutions in Canada. The area of study must embrace some aspect of poultry science. Grad-ships are for \$15,000 to \$19,000 (depending on field of study and location). Preference is given to students targeting applied research and entering their first year of an M.Sc. or Ph.D. program. Check website for application deadline. www.poultryindustrycouncil.ca/index2.htm

Prince Edward Island Potato Industry Scholarship

The PEI Potato Board offers a \$500 scholarship to PEI students studying at the graduate or undergraduate level of an agriculture degree program at any recognized Canadian agricultural institution or to students in a postgraduate degree program at a recognized Canadian university carrying out research projects related to potato production and utilization (including all disciplines-biotechnology, pathology, entomology, etc.). Undergraduate students must demonstrate through course work, summer employment, and/or home farm background an interest in working in the potato industry. Selection criteria for potential undergraduate scholarships include academic performance, extracurricular activities, and employment history. Graduate students will be considered on the basis of academic performance and relevance of the project to the improvement of the PEI potato industry. Applications must be submitted to the NSAC Awards Office not later than September 30.

Provincial Artisans (Fredericton) Inc. Bursaries

Several annual bursaries totalling \$10,000 are being funded by Provincial Artisans (Fredericton) Inc. To qualify for these awards a student must have a disability, be entering or currently enrolled in a postsecondary institution, and be a resident of New Brunswick. Deadline to apply is May 31. www.provart.net

Alvin Rowledge Bursary Award

The Atlantic Golf Superintendents Association (AGSA) has established the \$1,000 Alvin Rowledge Bursary Award which is available to residents of Atlantic Canada who are members in good standing of the AGSA. Its intent is both to encourage students to pursue golf course management as a career option and to support students in enhancing their knowledge and skills for the turf industry. Applicants must have a minimum of two summers/seasons work experience in golf course maintenance, preferably be enrolled in at least the second semester of a recognized turf grass program, and be presently enrolled in a minimum of a two-year program. Selection will be based on academic performance, financial need, and letters of reference. Applications must be submitted to the NSAC Awards Office not later than September 16.

George W. Slipp Memorial Scholarship

The Chicken Farmers of NB Marketing Board awards a \$1,000 scholarship in memory of Mr. George W. Slipp. The scholarship fund will be awarded annually to an NB resident who is enrolled in a postsecondary agricultural program. Selection is based on academic achievement, financial need, involvement in agriculture, and interest in the poultry or food industry. Application deadline is October 31.

Southern District 4-H Council Scholarship

The Southern District 4-H Club Council in New Brunswick awards a \$150 scholarship to a Southern District NB 4-H member attending a postsecondary institution. Application details are available from the NB Provincial 4-H Office.

Norah Stephen Oncology Scholar Awards

Ten awards will be granted each spring; five of these awards will be dedicated to cancer-related research projects including basic science, cancer informatics, epidemiology, outcomes, and socio-behavioural research. The remaining five awards will be dedicated to clinical training and experience projects. Each award, worth \$5,000, covers stipend support for the student for up to 14 weeks. Candidates and their supervisors are invited to complete an application outlining the project or practical experience directly related to the study of cancer. Materials, including academic transcripts, student's resume, and supervisor's resume, are to be submitted by February 14 to Cancer Care Nova Scotia. www.cancercare.ns.ca

Wales Scholarship

The Wales Scholarship is a \$6,000 annual scholarship fund provided by the Province of NS to commemorate the wedding of the Prince and Princess of Wales. The annual fund is administered by the Nova Scotia/Nunavut Command of the Royal Canadian Legion. The scholarship is awarded to a Nova Scotian with a disability who is starting or continuing postsecondary education in NS, and ineligible to receive assistance under the Employability Assistance for People with Disabilities (EAPD) Program. Application deadline is July 15 for awards for the upcoming academic year. Application details are available on the website or at the NSAC Awards Office. Nsabcu.EDnet.ns.ca or www.ns.legion.ca

George B. Whalen Memorial Scholarship

The New Brunswick Milk Marketing Board awards a \$750 scholarship in memory of George B. Whalen, who dedicated a great part of his life to the promotion of a more viable dairy industry in NB. Applicants must be NB residents enrolled in the second, third, or fourth year of study in a university degree program relating to agriculture or the dairy industry. Areas of study may include, but are not necessarily limited to, plant and animal science, agricultural engineering, veterinary medicine, and agricultural economics. Selection will be based on financial need, academic performance, involvement in community, and future plans. Applications including an essay of 300–500 words, two letters of recommendation, and a transcript of marks must be submitted not later than June 27 to: Scholarship Committee, NB Milk Marketing Board, Box 490, Sussex, NB E0E 1P0

Zonta Club of Truro Bursary

The Zonta Club of Truro, NS area has established a \$1,000 bursary open to women of mature status who are attending or plan to attend a program of postsecondary education. A woman of mature status is defined as one who has been out of secondary school for five or more years. The bursary's purpose is to provide incentive to further education to mature women who need financial assistance. The program of further education must be at least two semesters' duration. Selection criteria include having qualifications for admission to the chosen program, having a defined education goal, having made arrangements for looking after family/dependent responsibility, and being highly motivated to change lifestyle (volunteered in chosen field). The deadline is May 31. See the NSAC Awards Office for further application details.

[Administration and Faculty](#)

[Administrative Officers](#)

[Faculty](#)

[Appendix I: New Course Numbers to Old Course Numbers](#)

[Appendix II: Old Course Numbers to New Course Numbers](#)

[Appendix III: NSAC Courses Eligible for Admission to Atlantic Veterinary College](#)

Administration and Faculty

Administrative Officers

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-Associate Professor and Head

J. S. Clark, B.A. (Guelph), M.Sc. (Saskatchewan), Ph.D. (North Carolina)

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D. M. Dunlop, B.Sc.(Agr.) (NSAC), M.Sc. (Alberta)

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-Professor

S. G. Russell, B.Sc.(Agr.) (Guelph), M.B.A. (Saint Mary's), Ph.D. (Bradford)

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L. L. Sanderson, B.Sc.(Agr.), M.Sc. (Guelph)

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P. M. Sanger, B.A. (Melbourne), B.Ed. (Acadia), M.A. (Victoria)

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-Assistant Professor

J. B. Stackhouse, B.Sc.(Agr.Ec.), M.Sc. (Guelph)

-Associate Professor

D. Stiles, A.B. (Marshall), M.A., Ph.D (Maine)

-Associate Professor

J. C. Tait, B.Sc.(Agr.) (McGill), M.Sc. (New Hampshire)

-Associate Professor

E. K. Yiridoe, B.Sc. (Un. of Science & Technology, Ghana), M.Sc., Ph.D. (Guelph)

-Associate Professor

Engineering

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-Associate Professor and Head

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(Saskatchewan)

-Professor

T. Astatkie, B.Sc., M.Sc. (Addis Ababa), Ph.D. (Queen's)

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D. G. Bishop, B.Eng.(Agr.), M.Eng.(Agr.) (Technical University of Nova Scotia)

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M.Sc.(Agr.Eng.), Ph.D (Technical University of Nova Scotia)

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A. Georgallas, B.Sc. (Queen Elizabeth College), Ph.D. (London)

-Associate Professor

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-Canada Research Chair in Agricultural Resource Management

P. L. Havard, B.Sc.(Agr.Eng.), M.Sc., Ph.D. (McGill)

-Associate Professor

S. A. Madani, B.Sc. (Pahlavi), M.Sc. (British Columbia), Ph.D. (Washington)

-Professor

C. T. Madigan, B.Sc., M.Sc. (Windsor)

-Associate Professor

G.J. Pearson, B.Sc.(Queens), B.Ed. (Dalhousie), M.Sc. (Queens)

-Associate Professor

M. N. Rifai, M.Sc., Ph.D. (Nitra)

-Professor

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-Associate Professor

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-Professor

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-Oxford Frozen Foods Ltd. Research Professor

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(Leeds), Ph.D. (Dalhousie)

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-Professor Emeritus

J.-P. R. Le Blanc, B.A. (Montreal), B.Sc. (Quebec), Ph.D. (McGill)

-Professor

T. S. MacKenzie, Dip. LH (NSAC), B.Sc. (Dalhousie)

-Lecturer

L.R. Mapplebeck, B.Sc., M.Sc. (Guelph)

-Associate Professor

V. O. Nams, B.Sc. (Toronto), M.Sc. (Alberta), Ph.D. (Victoria)

-Professor

D. C. Percival, B.Sc.(Agr.), M.Sc., Ph.D. (Guelph)

-Associate Professor

A. R. Robinson, B.Sc.(Agr.), M.Sc., Ph.D. (McGill)

-Professor

V. Rupasinghe, B.Sc. (Peradeniya), M.Sc. (Iowa), Ph.D. (Guelph)

-Tree Fruit Biologist Research Chair

M. G. Sampson, B.Sc. (Dalhousie), B.Sc.(Agr.), M.Sc. (McGill)

-Associate Professor

G. W. Stratton, B.Sc.(Agr.), M.Sc., Ph.D. (Guelph)

-Professor

Plant and Animal Sciences

D. M. Anderson, B.S.A., M.Sc. (Manitoba), Ph.D. (Saskatchewan)

-Professor and Head

S. K. Asiedu, B.Sc.(Agr.), M.Sc., Ph.D. (McGill)

-Professor

B. F. Benkel, B.Sc. (Brock), Ph.D. (Ottawa)

-Canada Research Chair in Agricultural Biotechnology

C. D. Caldwell, B.Sc. (Mt. Allison), M.Sc. (Dalhousie), Ph.D. (East Anglia)

-Professor

J. Duston, B.Sc. (Bath), Ph.D. (Aston)

-Associate Professor

C. T. Enright, M.Sc., M.B.A., Ph.D. (Dalhousie)

-Associate Professor

A. H. Farid, B.Sc., M.Sc. (Shiraz), Ph.D. (Alberta)

-Professor

N. L. Firth, B.Sc. (Edinburgh), M.S. (Purdue), Ph.D. (Cornell)

-Associate Professor

A. H. Fredeen, B.S.A. (Saskatchewan), M.Sc. (Guelph), Ph.D.

(California)

-Professor

S. N. Goodyear, B.Sc.(Agr.) (McGill), M.Sc., Ph.D. (Guelph)

-Associate Professor

P. Y. Hamilton, B.Sc.(Agr.) (McGill), M.Sc. (Maine)

-Professor Emeritus

V. D. Jeliaskov, M.Sc., Ph.D. (HIA), Ph.D. (Massachusetts)

-Cropping Systems Research Professor

H-Y. Ju, B.Sc.(Agronomy) (Seoul), M.Sc., Ph.D. (McGill)

-Professor

R. R. Lada, B.Sc. (Hort), M.Sc. (Hort) (TNAU), Ph.D. (Adelaide)

-Associate Professor and Chair, Processing Carrot Research

D.H. Lynch, B.Sc.(Agr.), M.Sc.(Agr.) (McGill), Ph.D. (Guelph)

-Organic Agriculture Research Professor

L. A. MacLaren, B.Sc.(Agr.) (Guelph), M.Sc. (Alberta), Ph.D. (California)

-Professor

R. C. Martin, B.A., M.Sc. (Carleton), Ph.D. (McGill)

-Professor, Director of Organic Agriculture Centre of Canada

W. G. Mathewson, B.Sc., M.Sc. (Aberdeen)

-Professor Emeritus

J. C. Miller, B.Sc.(Agr.) (Guelph), M.Sc. (Alberta)

-Associate Professor

D. L. Patterson, B.Sc. (Alberta), M.Sc., Ph.D. (Guelph)

-Professor

K.W. Pruski, B.Sc. (Warsaw), M.Sc. (Warsaw, Alberta), Ph.D. (Wageningen)

-Chair in Potato Physiology

W. B. Ramsay, D.V.M. (Guelph)

-Associate Professor

B. Rathgeber, B.Sc.(Agr.) (Saskatchewan), M.Sc. (Arkansas), Ph.D.

(Saskatchewan)

-Assistant Professor

K. I. Rouvinen-Watt, B.Sc., M.Sc., Ph.D. (Kuopio)

-Associate Professor

T. Tennessen, B.A., B.Sc., M.Sc., Ph.D. (Alberta)

-Professor

G. Wang-Pruski, B.Sc. (Tian Jin), Ph.D. (Alberta)

-Associate Professor

Adjunct, Research, Honorary Research Professors and Honorary Research Associates

K. I. Al-Mughrabi, B.Sc., Agr. Eng., M.Sc. (Jordan), Ph.D. (Dalhousie)

-Adjunct

G. Belanger, B.Sc.A. (Laval), M.Sc. (Guelph), Ph.D. (Paris-Sud)

-Adjunct

C. Benchaar, D.E.A. (Toulouse), M.Sc. (Algeria), Ph.D. (Toulouse)

-Adjunct

R. L. Bernier, B.Sc., M.Sc., Ph.D. (Montreal)

-Adjunct

G. Boiteau, B.Sc., M.Sc. (Laval), Ph.D. (North Carolina)

-Adjunct

A. J. Campbell, B.Eng. (Technical University of Nova Scotia), M.A. (Massey),

Ph.D. (McGill)

-Adjunct

J. D. Castell, B.Sc., M.Sc. (Dalhousie), Ph.D. (Oregon)

-Adjunct

E. Charmley, B.Sc. (Aberdeen), Ph.D. (Reading)

-Adjunct

M. Chiappe, Ing. Agr. (Uruguay), M.A., Ph.D. (Minnesota)

-Adjunct

B. R. Christie, B.S.A. (Guelph), M.S.A. (Toronto), Ph.D. (Iowa)

-Adjunct

R. H. Coffin, B.Sc.(Agr.), M.Sc. (McGill), Ph.D. (Guelph)

-Adjunct

W. K. Coleman, B.A., Ph.D. (Western Ontario)

-Honorary Research Associate

H. De Jong, B.A. (Bethel College), M.Sc. (Kansas), Ph.D. (Wisconsin)

-Adjunct

R. Donald, B.Sc. (Mount Allison), M.Sc. (Guelph), Ph.D. (Saskatchewan)

-Research Associate

Z. Dong, B.Sc. (Shaanxi), M.Sc. (Peking), Ph.D. (Carleton), Post-Doc (Queens)

-Adjunct

A. El-Mowafi, B.V.M., M.Sc., Ph.D. (Zagazig)

-Adjunct

C. Embree, B.Sc. (Guelph), M.Sc. (B.C.)

-Adjunct

B. S. Flinn, B.Sc., M.Sc. (Queens), Ph.D. (UBC)

-Adjunct

G. A. Gagnon, B.Sc.(Eng.) (Guelph), Ph.D. (Waterloo)

-Adjunct

S. O. Gaul, B.Sc. (Mount St. Vincent), M.Sc. (Dalhousie), Ph.D. (Guelph)

-Adjunct

K.E. Glover, B.Sc.(Agr.), M.Sc. (Guelph), Ph.D. (Dalhousie)

-Adjunct

R. M. G. Hamilton, B.Sc.(Agr.), M.Sc.(Agr.) (McGill), Ph.D. (Western)

-Adjunct

A. R. Jamieson, B.Sc. (Acadia), M.Sc., Ph.D. (Guelph)

-Adjunct

J. R. Kemp, B.Sc., Ph.D. (Guelph)

-Adjunct

S. Lall, B.Sc. (Allahabad), M.Sc., Ph.D. (Guelph)

-Adjunct

R. H. Loucks, M.Sc. (British Columbia), Ph.D. (Michigan)

-Adjunct

K. E. MacKenzie, Ph.D. (Cornell)

-Adjunct

N. L. McLean, B.Sc.(Agr.), M.Sc. (Macdonald), Ph.D. (Dalhousie)

-Adjunct

J. MacLeod, B.Sc.(Agr.) (Macdonald), M.Sc. (McGill), Ph.D. (Cornell)

-Adjunct

K. B. MacRae, B.Ed. (British Columbia), M.Sc., Ph.D. (Oregon)

-Adjunct

K. E. MacKenzie, Ph.D. (Cornell)

-Adjunct

L. J. Mikitzel, B.Sc.(Agr.), M.Sc. (Guelph), Ph.D. (Alberta)

-Adjunct

J. Morton, B.Sc.(Agr.), M.Sc. (Guelph)

-Adjunct

A. Murphy, B.Sc. (Memorial), M.Sc. (Guelph)

-Honorary Research Associate

Y. Papadopoulos, B.Sc.(Agr.), M.Sc., Ph.D. (Guelph), M.B.A. (Saint Mary's)

-Adjunct

G. T. Patterson, B.Sc. (Alberta), M.Sc. (Guelph)

-Adjunct

D. Pink, B.Sc. (St. F.X.), Ph.D. (British Columbia)

-Adjunct

H. W. Platt, B.Sc. (Manitoba), Ph.D. (Saskatchewan)

-Adjunct

R. K. Prange, B.Sc. (Acadia), M.Sc. (British Columbia), Ph.D. (Guelph)

-Honorary Research Associate

J-P. Privé, B.Sc. (Winnipeg), M.Sc. (Guelph)

-Adjunct

J. Y. Raggett, M.Ed. (Greenwich)

-Adjunct

S. M. C. Robinson, B.Sc. (Acadia), M.Sc., Ph.D. (Simon Fraser)

-Adjunct

V. Rodd, B.Sc. (UPEI), M.Sc. (Manitoba)

-Affiliated Researcher

N. W. Ross, B.Sc., Ph.D. (McGill)

-Adjunct

F. G. Silversides, B.S.A. (Saskatchewan), M.S. (Massachusetts), Ph.D.
(Saskatchewan)

-Adjunct

R. Singh, B.Sc.(Agr.), M.Sc.(Agr.) (Agra Univ.), Ph.D. (N.Dakota)

-Adjunct

A. V. Sturz, B.Sc. (Newcastle-u-Tyne), Ph.D. (Manchester)

-Adjunct

G. C. C. Tai, B.Sc., M.Sc. (Taiwan), Ph.D. (Saskatchewan)

-Adjunct

W. G. Thomas, B.Sc. (British Columbia), M.Sc. (Dalhousie)

-Adjunct

P. R. Warman, B.Sc.(Agr.) (Rutgers), M.Sc., Ph.D. (Guelph)

-Adjunct

J. M. Wright, B.Sc. (Mount Allison), Ph.D. (Memorial)

-Honorary Research Associate

B. Zebarth, B.Sc.(Agr.), M.Sc. (Guelph), Ph.D. (Saskatchewan)

-Adjunct

Appendix I: New Course Numbers to Old Course Numbers

This appendix lists the new course number/course title, followed by the old course number/course title and course designations. Designations include: (A) for Agriculture Courses, (H) for Humanities Courses, (AS) for Animal Science Courses, (PS) for Plant Science Courses, (PDN) for Plant Science Production Courses. These designations will assist students in determining program requirements as described in the program syllabi.

NEW COURSE	OLD COURSE DESIGNATION	
AGRI1000: Agricultural Ecosystems DE	IN100: Agricultural Ecosystems	(A)
AGRI1001: Food Security DE	IN101: Food Security	(A)
AGRI1002: Transition to Organic Agriculture DE	IN202: Transition to Organic Agriculture	(A)
AGRI1003: Agriculture Today	H150: Agriculture Today	(A)
AGRI3000: Agrometeorology	MP330: Agrometeorology	
AGRI4000: Contemporary Issues in Agriculture	IN400: Issues in Agriculture	(A)
AGRI5210: Special Topics in Environmental Microbiology Microbiology	AG521: Special Topics in Environmental Microbiology	
AGRI5220: Special Topics in Weed Science	AG522: Special Topics in Weed Science	
AGRI5240: Special Topics in Environmental Impact Impact	AG524: Special Topics in Environmental Impact	
AGRI5250: Soil Microbiology	AG525: Soil Microbiology	

AGRI5260: Special Topics in Plant Pathology	AG526: Special Topics in Plant Pathology
AGRI5270: Economic Entomology	AG527: Economic Entomology
AGRI5310: Special Topics in Applied Ethology	AG531: Special Topics in Applied Ethology
AGRI5320: Special Topics in Animal Nutrition	AG532: Special Topics in Animal Nutrition
AGRI5340: Special Topics in Animal Physiology	AG534: Special Topics in Animal Physiology
AGRI5350: Animal Research Methods	AG535: Animal Research Methods
AGRI5360: Protein Nutrition	AG536: Protein Nutrition
AGRI5370: Special Topics in Animal Breeding and Genetics	AG537: Special Topics in Animal Breeding and Genetics
AGRI5380: Quantitative Genetics	AG538: Quantitative Genetics
AGRI5390: Molecular Genetic Analysis of Populations	AG539: Molecular Genetic Analysis of Populations
AGRI5410: Special Topics in Soil Fertility	AG541: Special Topics in Soil Fertility
AGRI5430: Special Topics in Environmental Analysis	AG543: Special Topics in Environmental Analysis
AGRI5440: Organic Environmental Analysis	AG544: Organic Environmental Analysis
AGRI5450: Environmental Soil Chemistry	AG545: Environmental Soil Chemistry
AGRI5460: Special Topics in Soil and Water Management	AG546: Special Topics in Soil and Water Management
AGRI5470: Special Topics in Analytical Instrumentation for Researchers	AG547: Special Topics in Analytical Instrumentation for Researchers
AGRI5510: Special Topics in Plant Breeding	AG551: Special Topics in Plant Breeding
AGRI5520: Plant Breeding Methods	AG552: Plant Breeding Methods
AGRI5530: Nitrogen in Crop Production	AG553: Nitrogen in Crop Production
AGRI5540: Special Topics in Crop Physiology	AG554: Special Topics in Crop Physiology (A)
AGRI5560: Advanced Crop Physiology	AG556: Advanced Crop Physiology
AGRI5570: Special Topics in Agricultural Biotechnology	AG557: Special Topics in Agricultural Biotechnology

AGRI5580: Plant Biotechnology 1 PS475	AG558: Plant Biotechnology cross-referenced as PS475	
AGRI5610: Special Topics in Animal Product Technology Technology	AG561: Special Topics in Animal Product Technology	
AGRI5620: Ruminant Digestive Physiology and Metabolism Metabolism	AG562: Ruminant Digestive Physiology and Metabolism	
AGRI5630: Intermediate Statistical Methods	AG563: Intermediate Statistical Methods	
AGRI5700: Communication Skills and Graduate Seminar Seminar	AG570: Communication Skills and Graduate Seminar	
AGRI5705: Module Course II	AG573: Module Course II	
AGRI5710: Module Course I	AG571: Module Course I	
AGRI5720: Applied Statistics and Experimental Design Experimental Design for Agriculture	AG572: Applied Statistics and Experimental Design for Agriculture	
AGRI5740: Advanced Studies in Food Chemistry	AG574: Advanced Studies in Food Chemistry	
AGRI9000: Graduate Thesis	AG900: Graduate Thesis	
AGRN0200: Potato Production	PS49: Potato Production	DE
AGRN0201: Cropping Systems I: Cereal-Based Systems	PS52: Cropping Systems I: Cereal-Based Systems	
AGRN0202: Cropping Systems II: Forage-Based Systems	PS56: Cropping Systems II: Forage-Based Systems	
AGRN1000: Organic Field Crop Management	PS202: Organic Field Crop Management (A, PS) DE	DE
AGRN3000: Forage Crops PDN)	PS300: Forage Crops	(A, PDN)
AGRN3001: Grain Production PDN)	PS305: Grain Production	(A, PDN)
AGRN3002: Potato Production PDN) DE	PS325: Potato Production	(A, PDN) DE
AGRN4000: Agronomy PS)	PS405: Agronomy	(A, PS)
AHVT0100: Animal Nursing - Clinical Practices I	AS60: Animal Nursing - Clinical Practices I	

AHVT0101: Animal Nursing - Clinical Practices II AS61: Animal Nursing - Clinical Practices II

AHVT0200: Animal Nursing - Clinical Practices III AS62: Animal Nursing - Clinical Practices III

AHVT0201: Animal Nursing - Clinical Practices IV AS63: Animal Nursing - Clinical Practices IV

AHVT0202: Principles of Disease AS24: Principles of Disease

AHVT0203: Principles of Pharmacology AS36: Principles of Pharmacology

AHVT0204: Laboratory Animal Care I AS37: Laboratory Animal Care I

AHVT0205: Veterinary Laboratory Techniques I AS39: Veterinary Laboratory Techniques I

AHVT0206: Support Services in Veterinary Practice AS40: Support Services in Veterinary Practice

AHVT0207: Veterinary Laboratory Techniques II AS49: Veterinary Laboratory Techniques II

AHVT0301: Practicum - Animal Health Technology AS99: Practicum - Animal Health Technology

AHVT0302: Animal Nursing - Clinical Practices V AS64: Animal Nursing - Clinical Practices V

AHVT0303: Veterinary Laboratory Techniques III AS59: Veterinary Laboratory Techniques III

AHVT0304: Animal Health Technology Project AS95: Animal Health Technology Project

AHVT0305: Laboratory Animal Care II AS71: Laboratory Animal Care II

ANSC0100: The Farm Workplace I AS12: The Farm Workplace I

ANSC0101: Farm Animal Production and Practices I AS13: Farm Animal Production and Practices I

ANSC0102: Farm Animal Production and Practices II AS14: Farm Animal Production and Practices II

ANSC0103: Farm Animal Production I AS16: Farm Animal Production I

ANSC0104: Farm Animal Biology I AS18: Farm Animal Biology I

ANSC0105: Farm Animal Breeding AS20: Farm Animal Breeding

ANSC0106: The Farm Workplace II AS22 : The Farm Workplace II

ANSC0107: Farm Animal Biology and Practices I AS26: Farm Animal Biology and Practices I

ANSC0108: Farm Animal Biology and Practices II AS27: Farm Animal Biology and Practices II

ANSC0109: Farm Animal Production II AS66: Farm Animal Production II

ANSC0110: Farm Animal Biology II AS68: Farm Animal Biology II

ANSC0111: Project-Seminar	AS65: Project-Seminar	
ANSC0200: Farm Animal Production III	AS76: Farm Animal Production III	
ANSC0201: Farm Animal Production III Practices	AS77: Farm Animal Production III Practices	
ANSC0202: Farm Animal Production IV	AS86: Farm Animal Production IV	
ANSC0203: Farm Animal Production IV Practices	AS87: Farm Animal Production IV Practices	
ANSC0300: Technology Project	AS90: Technology Project	
ANSC1000: Organic Livestock Production AS) DE	AS202: Organic Livestock Production	(A,
ANSC2000: Animal Agriculture I AS)	AS200: Animal Agriculture I	(A,
ANSC2001: Animal Agriculture II AS)	AS201: Animal Agriculture II	(A,
ANSC2002: The Horse: Its Biology and Use AS)	AS240: The Horse: Its Biology and Use	(A,
ANSC2003: Companion Animal Behaviour	AS241: Introduction to Applied Ethology	(AS)
ANSC3000: Animal Breeding AS)	AS310: Animal Breeding	(A,
ANSC3001: Animal Health AS)	AS320: Animal Health	(A,
ANSC3002: Domestic Animal Behaviour AS)	AS341: Domestic Animal Behavior	(A,
ANSC3003: Eggs and Dairy Products AS)	AS345: Eggs and Dairy Products	(A,
ANSC3004: Meat Science AS)	AS350: Meat Science	(A,
ANSC3005: Animal Welfare AS)	new course	(A,
ANSC4000: Topics in Animal Production I AS)	AS490: Topics in Animal Production I	(A,
ANSC4001: Topics in Animal Production I I AS)	AS492: Topics in Animal Production II	(A,
ANSC4003: Avian Production Systems	new course	(AS)

AQUA2000: Introduction to Aquaculture AS)	AS210: Introduction to Aquaculture	(A,
AQUA3000: Fish Health AS)	AS370: Fish Health	(A,
AQUA4000: Finfish Production	AS440: Finfish Production	(AS)
AQUA4001: Shellfish Production	AS445: Shellfish Production	(AS)
ARTS2000: Nature's Image: A Survey of Landscape Art Landscape Art	H230: Nature's Image: A Survey of (H)	
BIOL0100: Animal Anatomy	B15: Animal Anatomy	
BIOL0101: Plant Pathology	B40: Plant Pathology	
BIOL0102: Plant Physiology and Stress Management	PS45/B41: Plant Physiology and Stress Management	
BIOL0103: Weed Science	B46: Weed Science	
BIOL0200: Entomology	B43: Entomology	
BIOL1000: Botany	B100: Botany	
BIOL1001: Zoology	B110: Zoology	
BIOL2000: Cell Biology	B200: Cell Biology	
BIOL2001: Cell Biology Laboratory	B201: Cell Biology Laboratory	
BIOL2002: Plant Physiology	B260: Plant Physiology	
BIOL2003: Systematic Botany	B265: Systematic Botany	
BIOL2004: Structural Botany	B270: Structural Botany	
BIOL2005: Principles of Plant Pathology	B300: Principles of Plant Pathology	(A)
BIOL2006: Mammalian Physiology	AS230: Physiological Systems of Farm Animals (AS)	
BIOL3000: General Entomology	B320: General Entomology	(A)
BIOL3001: Ecology	B330: Ecology	
BIOL3002: Weed Science	B335: Weed Science	(A)
BIOL3003: Comparative Vertebrate Anatomy	B340: Comparative Vertebrate Anatomy	
BIOL3004: Environmental Physiology AS)	AS335: Environmental Physiology	(A,

BIOL3005: Physiology of Aquatic Animals AS)	AS380: Physiology of Aquatic Animals	(A,
BIOL3006: Aquatic Ecology	AS375: Aquatic Ecology	(AS)
BIOL3007: Insects and Diseases of Landscape Plants Landscape Plants	PS390: Insects and Diseases of (PS)	
BIOL3008: Growth, Reproduction and Lactation	AS330: Growth, Reproduction and Lactation (A, AS)	
BIOL4000: Avian Biology AS)	AS460: Avian Biology	(A,
BIOL4001: Animal Cell Culture	AS470: Animal Cell Culture	(AS)
BIOL4002: Conservation Biology	B435: Conservation Biology	
CHEM0050: Preparatory Chemistry	CS89: Preparatory Chemistry	
CHEM0100: Agricultural Chemistry	CS14: Agricultural Chemistry	
CHEM1000: General Chemistry I	CS101: General Chemistry I	
CHEM1001: General Chemistry II	CS102: General Chemistry II	
CHEM2000: Organic Chemistry I	CS201: Organic Chemistry I	
CHEM2001: Organic Chemistry II	CS202: Organic Chemistry II	
CHEM2002: Analytical Chemistry I	CS212: Analytical Chemistry I	
CHEM2003: Food Chemistry I	CS275: Food Chemistry I	(A)
CHEM2004: Introductory Food Chemistry	CS276: Introductory Food Chemistry	(A)
CHEM2005: Biochemistry I	no longer offered	
CHEM3000: Biochemistry	CS301: Biochemistry	
CHEM3001: Biochemical Pathways	CS302: Biochemical Pathways	
CHEM3002: Radiotracers in Agriculture	CS310: Radiotracers in Agriculture	(A)
CHEM3003: Advanced Integrated Chemistry Laboratory I Laboratory I	CS318: Advanced Integrated Chemistry	
CHEM3004: Instrumental Analytical Chemistry II	CS341: Instrumental Analytical Chemistry II	
CHEM3005: Instrumental Analytical Chemistry III Chemistry III	CS342: Instrumental Analytical	

CHEM3006: Mammalian Biochemistry	CS360: Mammalian Biochemistry	
CHEM3007: Food Chemistry II	CS375: Food Chemistry II	(A)
CHEM3008: Intermediate Food Chemistry	CS376: Intermediate Food Chemistry	(A)
CHEM3009: Environmental Chemistry	ES312: Environmental Chemistry	
CHEM4000: Advanced Integrated Chemistry Laboratory II	CS436: Advanced Integrated Chemistry Laboratory II	
CMMT0100: Veterinary Practice Communication	H45: Technical Communications	
CMMT0101: Communication Skills	H60: Communication Techniques	
CMMT3000: Communication Theory and Skills	new course	(H)
CSCI0100: Computational Methods	MP14: Computational Methods	
CSCI1000: Computer Methods	MP222: Computer Methods	
CSCI2000: Computer Science	MP220: Computer Science	
CSCI3000: Data Structures and Numerical Methods	MP336: Data Structures and Numerical Methods	
ECON0100: Introductory Microeconomics	EB13: Microeconomics	
ECON0101: Introductory Macroeconomics	EB12: Macroeconomics	
ECON1000: Principles of Microeconomics DE	EB110: Agricultural Economics	(A)
ECON1001: Principles of Macroeconomics	EB255: Macroeconomics I	
ECON2000: Intermediate Microeconomics	EB200: Microeconomics I	
ECON2001: Intermediate Macroeconomics	EB305: Macroeconomics II	
ECON2002: Production Economics	EB220: Production Economics	(A)
ECON3000: Mathematical Economics	EB260: Mathematical Economics	
ECON3001: Environmental Economics	new course	
ECON3002: Agricultural and Food Policy	EB320: Agricultural and Food Policy I	(A)
ECON3003: Mathematical Programming	EB325: Operations Research	
ECON3004: Agricultural Markets and Prices	EB330: Agricultural Markets and Prices	(A)
ECON3005: Econometrics	EB360: Econometrics	

ECON4000: Advanced Microeconomics	new course	
ECON4001: Agri-food Policy Analysis	EB419: Agri-food Policy Analysis	(A)
ECON4002: Topics in Advanced Farm Management Management	EB441: Topics in Advanced Farm Management	(A)
ECON4003: Resource Economics	new course	
ENGL0100: Technical Writing	H10: Technical Writing	
ENGL1000: Composition	H113: Composition	(H)
ENGL1001: The Novel	H101: The English and American Novel	(H)
ENGL1002: Nature in English and American Literature Literature	H102: Nature in English and American Literature	(H)
ENGL3000: Literature of Atlantic Canada	H310: Literature of Atlantic Canada	(H)
ENGN0100: Surveying	AE14: Surveying	
ENGN0101: Horticultural Engineering	AE38: Horticultural Engineering	
ENGN0102: Soil and Water Resources Management Management	AE46: Soil and Water Resources Management	
ENGN0103: Agricultural Power Systems	AE52: Agricultural Power Systems	
ENGN1000: Computer Aided Graphics and Projection Projection	AE101: Computer Aided Graphics and Projection	
ENGN1001: Design and Graphics	AE102: Design and Graphics	
ENGN1002: Statics	AE110: Statics	
ENGN1003: Properties and Mechanics of Materials Materials	AE120: Properties and Mechanics of Materials	
ENGN1004 Wood Construction Technology I	new course	
ENGN1005 Metal Construction Technology I	new course	
ENGN2000: Environmental Impacts and Resource Management Management	AE200: Environmental Impacts and Resource Management	(A)
ENGN2001: Agricultural Machinery	AE202: Agricultural Machinery	
ENGN2002: Introduction to Systems Analysis	AE204: Introduction to Systems Analysis	
ENGN2003: Food Processing Systems	AE207: Food Processing Systems	(A)

ENGN2004: Aquacultural Environment	AE215: Aquatic Environment	(A)
ENGN2005: Dynamics	AE230: Dynamics	
ENGN2006: Surveying	AE260: Surveying	
ENGN2007 Fluid Power Technology	new course	
ENGN2008 Digital Electronics and Computer Interfacing course		new
ENGN2009 Metal Construction Technology II	new course	
ENGN2010 Wood Construction Technology II	new course	
ENGN3000: Electric Circuits	AE300: Electric Circuits	
ENGN3001: Engineering Measurements and Controls Controls	AE305: Engineering Measurements and (A)	
ENGN3002: Thermodynamics	AE310: Thermodynamics	
ENGN3003: Technology for Precision Agriculture Agriculture	AE311: Technology for Precision	
ENGN3004: Digital Circuits	AE312: Digital Circuits	
ENGN3005: Fundamentals of Chemical Engineering Engineering	AE314: Fundamentals of Chemical	
ENGN3006: Strength of Materials	AE315: Strength of Materials	
ENGN3007: Structures and Their Environment	AE320: Structures and Their Environment	(A)
ENGN3008: Circuit Analysis	AE332: Circuit Analysis	
ENGN3009: Materials Handling and Processing	AE335: Materials Handling and Processing (A)	
ENGN3010: Soil and Water	AE340: Soil and Water	(A)
ENGN3011: Fluid Mechanics	AE350: Fluid Mechanics	
ENGN3012: Principles of Agricultural Machinery Machinery	AE355: Principles of Agricultural (A)	
ENGN3013: Aquacultural Engineering	AE360: Aquatic Engineering	(A)
ENGN3015: Irrigation and Drainage	AE370: Irrigation and Drainage	
ENGN3016: Engineering Economy	AE380: Engineering Economy	
ENGN3017: Design Project	AE206: Design Project	

ENGN3018: Technology Modules	new course	
ENGN3019: Communications Technology	new course	
ENGN4000: Water and Water Quality Management	AE410: Water and Water Quality Management	(A)
ENGN4001: Water Quality Issues	AE412: Water Quality Issues	(A)
ENGN4002: Management of Mechanized Agricultural Systems	AE420: Management of Mechanized Agricultural Systems	(A)
ENGN4003: Senior Design Project for Engineers I	AE440: Senior Design Project for Engineers I	
ENVS1000: Basic Composting Skills DE	ES202: Basic Composting Skills	(A)
ENVS2000: Environmental Studies I	ES200: Environmental Studies I	(A)
ENVS2001: Environmental Studies II	ES201: Environmental Studies II	(A)
ENVS3000: Environmental Impact	B365: Environmental Impact	
ENVS3001: Environmental Sampling and Analysis	ES330: Environmental Sampling and Analysis	
ENVS3002: Waste Treatment and Site Remediation	ES333: Waste Reduction and Site Remediation	(A)
ENVS3003: Environmental Studies Field Course	ES350: Environmental Studies Field Course	
ENVS3004: Principles of Pest Management	B385: Principles of Pest Management	(A)
ENVS4000: Pesticides in Agriculture	B405: Pesticides in Agriculture	(A)
ENVS4001: Economic Plant Pathology	B406: Economic Plant Pathology	(A)
ENVS4002: Economic Entomology	B425: Economic Entomology	(A)
ENVS4003: Applied Weed Science	B445: Applied Weed Science	(A)
ENVS4004: The Science of Composting & Its Application	CS457: The Science of Composting & Its Application	(A)
EXTE3000: Extension Education in the Rural Community		H320:
Extension Education in the Rural Community	(H)	
EXTE3001: Leadership Development and the Social Action Process		H321:
Leadership Development and the Social Action Process	(H)	

FOOD3000: Food Quality Assurance	CS380: Food Quality Assurance	(A)
FREN1000: French Language I	H130: Introductory French	(H)
FREN1001: French Language II	H131: French Language II	(H)
GENE2000: Genetics	B240: Genetics I	
GENE3000: An Introduction to Molecular Genetics	B370: An Introduction to Molecular Genetics	
GENE3001: Population and Quantitative Genetics	B375: Population and Quantitative Genetics	
GENE4000: Molecular Applications to Animal Production		
Production	AS465: Molecular Applications to Animal (AS)	
GENE4003: Biotechnology	new course	
GEOG1000: Introductory Human Geography	H170: Introductory Human Geography	(H)
GEOG3000: Rural Geography	H370: Rural Geography	(H)
GEOL2000: Introduction to Geology	CS230: Introduction to Geology	
HIST1000: Introduction to Canadian History I:1000-1867 course	(H)	new
HIST1001: Introduction to Canadian History II:1867-Present course	(H)	new
HIST3000: Rural History	H301: Rural History	(H)
HORT0100: Landscape Plants I	ES60: Landscape Plants I	
HORT0101: Landscape Plants II	ES61: Landscape Plants II	
HORT0102: Turfgrass Production and Management	PS47: Turfgrass Production and Management	
HORT0103: Landscape Horticulture I	PS50: Landscape Horticulture I	
HORT0200: Nursery Crop Production	PS38: Nursery Crop Production	
HORT0201: Greenhouse Crop Management	PS39: Greenhouse Crop Management	
HORT0202: Small Fruit Crops	PS43: Small Fruit Crops	
HORT0203: Tree Fruit Crops	PS44: Tree Fruit Crops	
HORT0204: Landscape Plants III	ES62: Landscape Plants III	

HORT0205: Residential Landscape Design and Construction Residential Landscape Design and Construction		PS51:
HORT0206: Landscape Techniques	PS70: Landscape Techniques	
HORT0207: Arboriculture	PS71: Arboriculture	
HORT0208: Landscape Maintenance	PS72: Landscape Maintenance	
HORT0209: Landscape Horticulture II	PS73: Landscape Horticulture II	
HORT0210: Landscape Design and Construction	PS74: Landscape Design and Construction	
HORT2000: Vegetable Production (A, PDN) DE	PS200: Vegetable Production	(A, PDN) DE
HORT2001: Principles of Organic Horticulture Production (A)	PS210: Principles of Organic Horticultural Crop Production (A, PDN) DE	
HORT2002: Landscape Horticulture Work Program I Program I	PS270: Landscape Horticulture Work Program I (PS)	
HORT2003: The British Garden	PS290: The British Garden	(PS)
HORT2004: Introduction to Viticulture	PS280: Introduction to Viticulture	(PS)
HORT2005: Design and Construction of Turf Facilities	new course	
HORT3000: Environmental Processes and Natural Landscape Functions Landscape Functions	ES370: Environmental Processes and Natural Landscape Functions	
HORT3001: Landscape Project Management	ES380: Landscape Project Management	
HORT3002: Tree Fruit Crops (A, PDN)	PS315: Tree Fruit Crops	(A, PDN)
HORT3003: Small Fruit Crops (A, PDN)	PS320: Small Fruit Crops	(A, PDN)
HORT3004: Greenhouse Crop Production and Floriculture Floriculture	PS330: Greenhouse Crop Production and (A, PDN)	
HORT3005: Landscape Plant Production (A, PDN)	PS335: Landscape Plant Production	(A, PDN)
HORT3006: Landscape Horticulture Work Program II Program II	PS370: Landscape Horticulture Work Program II (PS)	
HORT3007: Environmental Horticulture Project I	PS360: Landscape Horticulture Project I (PS)	

HORT4000: Urban Tree Management	ES470: Urban Tree Management	
HORT4001: Horticulture (PS)	PS410: Horticulture	(A,
HORT4002: Management of Specialized Turf	PS440: Management of Specialized Turf	(PS)
HORT4004: Environmental Horticulture Project II	PS460: Landscape Horticulture Project II	(PS)
INTD2000: Food Systems in the Tropics	IN205: Food Systems in the Tropics	(A)
INTD2001: Agricultural Systems of Central Europe Europe	IN206: Agricultural Systems of Central Europe	
INTD3000: Tropical Agriculture (PS)	PS355: Tropical Agriculture	(A,
MATH0050: Functions	MP85: Functions	
MATH1000: Calculus and Analytic Geometry I	MP100: Calculus and Analytic Geometry I	
MATH1001: Calculus and Analytic Geometry II	MP105: Calculus and Analytic Geometry II	
MATH2000: Multivariable Calculus	MP230: Multivariable Calculus	
MATH2001: Differential Equations	MP236: Differential Equations	
MATH3000: Applied Linear Algebra	MP335: Applied Linear Algebra	
MATH4000: Agricultural Modelling	MP460: Agricultural Modelling	
MGMT0100:Accounting	EB10: Accounting	
MGMT0101: Applied Accounting and Taxation	EB11: Applied Accounting and Taxation	
MGMT0102: Agricultural Marketing	EB40: Marketing Practices	
MGMT0103: Business Law	EB41: Business Law	
MGMT0200: Applied Farm Management	EB42: Applied Farm Management	
MGMT0201: Business Project	EB65: Business Project	
MGMT0300: Farm Project	EB72: Farm Project	
MGMT0301: Practicum - Farming Technology	EB95: Practicum - Farming Technology	
MGMT0302: Economics and Business Technology Project Technology Project		EB90:
MGMT1000: Small Business Entrepreneurship Entrepreneurship	EB225: Introduction to Small Business Entrepreneurship	

MGMT2000: Human Resource Management	H140: Personnel Management	
MGMT2001: Introduction to Business Law	EB230: Introduction to Business Law	
MGMT2002: Marketing	EB335: Business Marketing	
MGMT2003: Farm Management	EB340: Farm Management I	(A)
MGMT2004: Financial Accounting I	EB210: Financial Accounting I	
MGMT2005: Financial Accounting II	EB215: Financial Accounting II	
MGMT3000: Management Accounting	EB315: Management Accounting	
MGMT3001: International Marketing	EB430: International Marketing	
MGMT3002: Consumer Behaviour Marketing	EB435: Consumer Behaviour and Food Marketing	
MGMT4000: Strategic Management	EB410: Strategic Management in Agribusiness	
MGMT4001: Advanced Entrepreneurship	EB445: Agribusiness Entrepreneurship	(A)
MICR2000: Microbiology	B225: Microbiology	
MICR3000: Food Microbiology	B355: Food Microbiology	(A)
MICR4000: Soil Microbiology	B400: Soil Microbiology	(A)
NUTR3000: Animal Nutrition	AS305: Animal Nutrition	(AS)
NUTR3001: Applied Animal Nutrition AS)	AS325: Applied Animal Nutrition	(A, AS)
NUTR3002: Fish Nutrition AS)	AS365: Fish Nutrition	(A, AS)
NUTR4000: Ruminant Digestive Physiology and Metabolism Metabolism	AS475: Ruminant Digestive Physiology and Metabolism	(AS)
PHIL3000: Environmental and Agricultural Ethics	H350: Environmental and Agricultural Ethics	(H)
PHYS0050: Introductory Physics	MP90: Introductory Physics	
PHYS1000: Physics for the Life Sciences I	MP150: Biophysics I	
PHYS1001: Physics for the Life Sciences II	MP250: Biophysics II: Perception	
PHYS1002: Physics I	MP140: Physics I	
PHYS1003: Physics II	MP145: Physics II	

PLSC0100: Utilization of Plant Resources	PS35: Utilization of Plant Resources	
PLSC0200: Plant Propagation	PS55: Plant Propagation	
PLSC0201: Technology Project	PS90: Technology Project	
PLSC0202: Plant Science Techniques	PS99: Plant Science Techniques	
PLSC0203: Plant Products Physiology	PS76: Plant Products Physiology	
PLSC1000: Farm Woodlot Management PDN)	PS147: Farm Woodlot Management	(A,
PLSC2000: Specialty Crops	PS211: Specialty Crops	(PDN)
PLSC2001: Theory and Practice of Plant Propagation	new course	(PS)
PLSC4000: Plant Breeding PS)	PS400: Plant Breeding	(A,
PLSC4001: Crop Adaptation PS)	PS415: Crop Adaptation	(A,
POLS1000: Introduction to Political Science	new course	(H)
POLS1001: Structure and Function of Government	new course	(H)
RESM4000: Bio-Environmental Systems Management Project-Seminar I	AE449: Project-Seminar I	(A)
RESM4001: Bio-Environmental. Systems Management Project-Seminar II	AE450: Project-Seminar II	(A)
RESM4002: Animal Science Project-Seminar I	AS449: Project-Seminar I	(A)
RESM4003: Animal Science Project-Seminar II	AS450: Project-Seminar II	(A)
RESM4004: Research Methods for Economics and Business	EB425: Research Methods	(A)
RESM4005: Project-Seminar for Economics and Business	EB450: Project-Seminar	(A)
RESM4006: Environmental Sciences Project-Seminar I	ES449: Project-Seminar I	(A)
RESM4007: Environmental Sciences Project-Seminar II	ES450: Project-Seminar II	(A)
RESM4008: Plant Science Project-Seminar I PS)	PS449: Plant Science Project-Seminar I	(A,
RESM4009: Plant Science Project-Seminar II PS)	PS450: Plant Science Project-Seminar II	(A,

RESM4010: Aquaculture Project-Seminar I	AS449: Project-Seminar I	(A)
RESM4011: Aquaculture Project-Seminar II	AS450: Project-Seminar II	(A)
SOCI1000: Introductory Sociology	H160: Introductory Sociology	(H)
SOCI1001: Introductory Sociology II	new course	(H)
SOCI3000: Rural Sociology	H360: Rural Sociology	(H)
SOIL0100: Principles of Soil Science	CS12: Principles of Soil Science	
SOIL0200: Soil Management	CS13: Soil Management	
SOIL2000: Introduction to Soil Science	CS220: Introduction to Soil Science	(A)
SOIL3000: Soil Fertility	CS320: Soil Fertility	(A)
SOIL3001: Soil Conservation in Agriculture	CS345: Soil Conservation in Agriculture	(A)
SOIL4000: Environmental Soil Chemistry	CS440: Environmental Soil Chemistry	
SPAN1000: Basic Spanish I	H135: Basic Spanish I	(H)
SPAN1001: Basic Spanish II	H136: Basic Spanish II	(H)
SPEC2000: Topics in Economics and Business Management	EB221: Topics in Economics and Business Management	(A)
SPEC2001: Topics in International Development (A)	new course	
SPEC4000: Special Topics in Animal Science or Aquaculture	AS421: Special Topics in Animal Science or Aquaculture	(AS)
SPEC4001: Special Topics in Agribiology I	B421: Special Topics in Agribiology I	(A)
SPEC4002: Special Topics in Agribiology II	B422: Special Topics in Agribiology II	(A)
SPEC4003: Special Topics in Chemistry and Soil Science I	CS415: Special Topics in Chemistry and Soil Science I	(A)
SPEC4004: Special Topics in Chemistry and Soil Science II	CS425: Special Topics in Chemistry and Soil Science II	(A)
SPEC4005: Special Topics in Agricultural Economics and Business I and Business I	EB421: Special Topics in Agricultural Economics and Business I	(A)

SPEC4006: Special Topics in Agricultural Economics and Business II	EB422: Special Topics in Agricultural Economics and Business II	(A)
SPEC4007: Special Topics in Environmental Studies I	ES401: Special Topics in Environmental Studies I	(A)
SPEC4008: Special Topics in Environmental Studies II	ES402: Special Topics in Environmental Studies II	(A)
SPEC4009: Special Topics in Rural Studies	H403: Special Topics in Humanities	(H)
SPEC4010: Special Topics in Plant Science I	PS421: Special Topics in Plant Science I	(A, PS)
SPEC4011: Special Topics in Plant Science II	PS422: Special Topics in Plant Science II	(A, PS)
SPEC4012: Directed Studies in Agricultural Engineering	AE415: Directed Studies in Agricultural Engineering	(A)
SPEC4013: Directed Studies in International Development		new course
STAT2000: Introduction to Statistics	MP210: Introduction to Statistics	
STAT2001: Probability and Statistics for Engineering	MP212: Probability and Statistics for Engineering	
STAT3000: Introduction to Planned Studies: Surveys and Experiments	MP211: Introduction to Planned Studies: Surveys and Experiments	
STAT4000: Intermediate Statistical Methods	MP420: Intermediate Statistical Methods	

Appendix II: Old Course Numbers to New Course Numbers

This appendix lists the old course number and course title, followed by the new course number/course title and the course designations. Designations include: (A) for Agriculture courses, (H) for Humanities courses, (AS) for Animal Science courses, (PS) for Plant Science courses, (PDN) for Plant Science Production courses, and DE for Distance Education courses. These designations will assist students in determining program requirements as described in the program syllabi.

OLD COURSE	NEW COURSE	DESIGNATION
AE14: Surveying	ENGN0100: Surveying	
AE28: Wood Construction Techniques	no longer offered	
AE38: Horticultural Engineering	ENGN0101: Horticultural Engineering	
AE46: Soil and Water Resources Management Management	ENGN0102: Soil and Water Resources Management	
AE52: Agricultural Power Systems	ENGN0103: Agricultural Power Systems	
AE101: Computer Aided Graphics and Projection and Projection	ENGN1000: Computer Aided Graphics and Projection	
AE102: Design and Graphics	ENGN1001: Design and Graphics	
AE110: Statics	ENGN1002: Statics	
AE120: Properties and Mechanics of Materials Materials	ENGN1003: Properties and Mechanics of Materials	
AE200: Environmental Impacts and Resource Management	ENGN2000: Environmental Impacts and Resource Management	(A)
AE202: Agricultural Machinery	ENGN2001: Agricultural Machinery	
AE204: Introduction to Systems Analysis	ENGN2002: Introduction to Systems Analysis	
AE206: Design Project	ENGN3017: Design Project	
AE207: Food Processing Systems	ENGN2003: Food Processing Systems	(A)
AE215: Aquatic Environment	ENGN2004: Aquacultural Environment	(A)
AE230: Dynamics	ENGN2005: Dynamics	
AE260: Surveying	ENGN2006: Surveying	
AE300: Electric Circuits	ENGN3000: Electric Circuits	
AE305: Engineering Measurements and Controls and Controls	ENGN3001: Engineering Measurements and Controls	(A)
AE310: Thermodynamics	ENGN3002: Thermodynamics	
AE311: Technology for Precision Agriculture Agriculture	ENGN3003: Technology for Precision Agriculture	

AE312: Digital Circuits	ENGN3004: Digital Circuits	
AE314: Fundamentals of Chemical Engineering Engineering	ENGN3005: Fundamentals of Chemical Engineering	
AE315: Strength of Materials	ENGN3006: Strength of Materials	
AE320: Structures and Their Environment	ENGN3007: Structures and Their Environment (A)	
AE332: Circuit Analysis	ENGN3008: Circuit Analysis	
AE335: Materials Handling and Processing	ENGN3009: Materials Handling and Processing (A)	
AE340: Soil and Water	ENGN3010: Soil and Water (A)	
AE350: Fluid Mechanics	ENGN3011: Fluid Mechanics	
AE355: Principles of Agricultural Machinery	ENGN3012: Principles of Agricultural Machinery (A)	
AE360: Aquatic Engineering	ENGN3013: Aquacultural Engineering (A)	
AE370: Irrigation and Drainage	ENGN3015: Irrigation and Drainage	
AE380: Engineering Economy	ENGN3016: Engineering Economy	
AE410: Water and Water Quality Management Management	ENGN4000: Water and Water Quality (A)	
AE412: Water Quality Issues	ENGN4001: Water Quality Issues (A)	
AE415: Directed Studies in Agricultural Engineering Agricultural Engineering	SPEC4012: Directed Studies in (A)	
AE420: Management of Mechanized Agricultural Systems	ENGN4002: Management of Mechanized Agricultural Systems (A)	
AE440: Senior Design Project for Engineers I I	ENGN4003: Senior Design Project for Engineers	
AE449: Project-Seminar I	RESM4000: Bio-Environmental Systems Management Project-Seminar I (A)	
AE450: Project-Seminar II	RESM4001: Bio-Environmental Systems Management Project-Seminar II (A)	
AG521: Special Topics in Environmental Microbiology Environmental Microbiology	AGRI5210: Special Topics in	

AG522: Special Topics in Weed Science	AGRI5220: Special Topics in Weed Science
AG524: Special Topics in Environmental Impact Impact	AGRI5240: Special Topics in Environmental Impact
AG525: Soil Microbiology	AGRI5250: Soil Microbiology
AG526: Special Topics in Plant Pathology	AGRI5260: Special Topics in Plant Pathology
AG527: Economic Entomology	AGRI5270: Economic Entomology
AG531: Special Topics in Applied Ethology	AGRI5310: Special Topics in Applied Ethology
AG532: Special Topics in Animal Nutrition	AGRI5320: Special Topics in Animal Nutrition
AG534: Special Topics in Animal Physiology	AGRI5340: Special Topics in Animal Physiology
AG535: Animal Research Methods	AGRI5350: Animal Research Methods
AG536: Protein Nutrition	AGRI5360: Protein Nutrition
AG537: Special Topics in Animal Breeding and Genetics Breeding and Genetics	AGRI5370: Special Topics in Animal Breeding and Genetics
AG538: Quantitative Genetics	AGRI5380: Quantitative Genetics
AG539: Molecular Genetic Analysis of Populations Populations	AGRI5390: Molecular Genetic Analysis of Populations
AG541: Special Topics in Soil Fertility	AGRI5410: Special Topics in Soil Fertility
AG543: Special Topics in Environmental Analysis Analysis	AGRI5430: Special Topics in Environmental Analysis
AG544: Organic Environmental Analysis	AGRI5440: Organic Environmental Analysis
AG545: Environmental Soil Chemistry	AGRI5450: Environmental Soil Chemistry
AG546: Special Topics in Soil and Water Management Water Management	AGRI5460: Special Topics in Soil and Water Management
AG547: Special Topics in Analytical Instrumentation Instrumentation for for Researchers	AGRI5470: Special Topics in Analytical Instrumentation for Researchers
AG551: Special Topics in Plant Breeding	AGRI5510: Special Topics in Plant Breeding
AG552: Plant Breeding Methods	AGRI5520: Plant Breeding Methods
AG553: Nitrogen in Crop Production	AGRI5530: Nitrogen in Crop Production
AG554: Special Topics in Crop Physiology	AGRI5540: Special Topics in Crop Physiology (A)

AG556: Advanced Crop Physiology	AGRI5560: Advanced Crop Physiology
AG557: Special Topics in Agricultural Biotechnology	AGRI5570: Special Topics in Agricultural Biotechnology
AG558: Plant Biotechnology cross-referenced as PS475	AGRI5580: Plant Biotechnology I
AG561: Special Topics in Animal Product Technology	AGRI5610: Special Topics in Animal Product Technology
AG562: Ruminant Digestive Physiology and Metabolism	AGRI5620: Ruminant Digestive Physiology and Metabolism
AG563: Intermediate Statistical Methods	AGRI5630: Intermediate Statistical Methods
AG570: Communication Skills and Graduate Seminar	AGRI5700: Communication Skills and Graduate Seminar
AG571: Module Course I	AGRI5710: Module Course I
AG572: Applied Statistics and Experimental Design for Agriculture	AGRI5720: Applied Statistics and Experimental Design
AG573: Module Course II	AGRI5705: Module Course II
AG574: Advanced Studies in Food Chemistry	AGRI5740: Advanced Studies in Food Chemistry
AG900: Graduate Thesis	AGRI9000: Graduate Thesis
AS12: The Farm Workplace I	ANSC0100: The Farm Workplace I
AS13: Farm Animal Production and Practices I	ANSC0101: Farm Animal Production and Practices I
AS14: Farm Animal Production and Practices II	ANSC0102: Farm Animal Production and Practices II
AS16: Farm Animal Production I	ANSC0103: Farm Animal Production I
AS18: Farm Animal Biology I	ANSC0104: Farm Animal Biology I
AS20: Farm Animal Breeding	ANSC0105: Farm Animal Breeding
AS22 : The Farm Workplace II	ANSC0106: The Farm Workplace II
AS24: Principles of Disease	AHVT0202: Principles of Disease
AS25: Animal Nursing and Clinical Procedures I	no longer offered
AS26: Farm Animal Biology and Practices I	ANSC0107: Farm Animal Biology and Practices I

AS27: Farm Animal Biology and Practices II	ANSC0108: Farm Animal Biology and Practices II	
AS36: Principles of Pharmacology	AHVT0203: Principles of Pharmacology	
AS37: Laboratory Animal Care I	AHVT0204: Laboratory Animal Care I	
AS39: Veterinary Laboratory Techniques I	AHVT0205: Veterinary Laboratory Techniques I	
AS40: Support Services in Veterinary Practice Practice	AHVT0206: Support Services in Veterinary Practice	
AS46: Animal Nursing and Clinical Procedures II	no longer offered	
AS49: Veterinary Laboratory Techniques II	AHVT0207: Veterinary Laboratory Techniques II	
AS59: Veterinary Laboratory Techniques III	AHVT0303: Veterinary Laboratory Techniques III	
AS60: Animal Nursing - Clinical Practices I	AHVT0100: Animal Nursing - Clinical Practices I	
AS61: Animal Nursing - Clinical Practices II	AHVT0101: Animal Nursing - Clinical Practices II	
AS62: Animal Nursing - Clinical Practices III	AHVT0200: Animal Nursing - Clinical Practices III	
AS63: Animal Nursing - Clinical Practices IV	AHVT0201: Animal Nursing - Clinical Practices IV	
AS64: Animal Nursing - Clinical Practices V	AHVT0302: Animal Nursing - Clinical Practices V	
AS65: Project-Seminar	ANSC0111: Project-Seminar	
AS66: Farm Animal Production II	ANSC0109: Farm Animal Production II	
AS68: Farm Animal Biology II	ANSC0110: Farm Animal Biology II	
AS71: Laboratory Animal Care II	AHVT0305: Laboratory Animal Care II	
AS76: Farm Animal Production III	ANSC0200: Farm Animal Production III	
AS77: Farm Animal Production III Practices	ANSC0201: Farm Animal Production III Practices	
AS86: Farm Animal Production IV	ANSC0202: Farm Animal Production IV	
AS87: Farm Animal Production IV Practices	ANSC0203: Farm Animal Production IV Practices	
AS90: Technology Project	ANSC0300: Technology Project	
AS95: Animal Health Technology Project	AHVT0304: Animal Health Technology Project	
AS99: Practicum - Animal Health Technology Technology	AHVT0301: Practicum - Animal Health Technology	
AS200: Animal Agriculture I AS)	ANSC2000: Animal Agriculture I	(A,

AS201: Animal Agriculture II AS)	ANSC2001: Animal Agriculture II	(A,
AS202: Organic Livestock Production	ANSC1000: Organic Livestock Production	(A, AS) DE
AS210: Introduction to Aquaculture AS)	AQUA2000: Introduction to Aquaculture	(A,
AS230: Physiological Systems of Farm Animals	BIOL2006: Mammalian Physiology	(AS)
AS240: The Horse: Its Biology and Use	ANSC2002: The Horse: Its Biology and Use	(A, AS)
AS241: Introduction to Applied Ethology	ANSC2003: Companion Animal Behaviour	(AS)
AS305: Animal Nutrition	NUTR3000: Animal Nutrition	(AS)
AS310: Animal Breeding AS)	ANSC3000: Animal Breeding	(A,
AS320: Animal Health AS)	ANSC3001: Animal Health	(A,
AS325: Applied Animal Nutrition AS)	NUTR3001: Applied Animal Nutrition	(A,
AS330: Growth, Reproduction and Lactation	BIOL3008: Growth, Reproduction and Lactation	(A, AS)
AS335: Environmental Physiology AS)	BIOL3004: Environmental Physiology	(A,
AS341: Domestic Animal Behavior AS)	ANSC3002: Domestic Animal Behaviour	(A,
AS345: Eggs and Dairy Products AS)	ANSC3003: Eggs and Dairy Products	(A,
AS350: Meat Science AS)	ANSC3004: Meat Science	(A,
AS365: Fish Nutrition AS)	NUTR3002: Fish Nutrition	(A,
AS370: Fish Health AS)	AQUA3000: Fish Health	(A,
AS375: Aquatic Ecology	BIOL3006: Aquatic Ecology	(AS)
AS380: Physiology of Aquatic Animals AS)	BIOL3005: Physiology of Aquatic Animals	(A,

AS421: Special Topics in Animal Science or Aquaculture	SPEC4000: Special Topics in Animal Science or Aquaculture	(AS)
AS440: Finfish Production	AQUA4000: Finfish Production	(AS)
AS445: Shellfish Production	AQUA4001: Shellfish Production	(AS)
AS449: Project-Seminar I	RESM4002: Animal Science Project-Seminar I	(A)
AS449: Project-Seminar I	RESM4010: Aquaculture Project-Seminar I	(A)
AS450: Project-Seminar II	RESM4003: Animal Science Project-Seminar II	(A)
AS450: Project-Seminar II	RESM4011: Aquaculture Project-Seminar II	(A)
AS460: Avian Biology AS)	BIOL4000: Avian Biology	(A,
AS465: Molecular Applications to Animal Production	GENE4000: Molecular Applications to Animal Production	(AS)
AS470: Animal Cell Culture	BIOL4001: Animal Cell Culture	(AS)
AS475: Ruminant Digestive Physiology and Metabolism	NUTR4000: Ruminant Digestive Physiology and Metabolism	(AS)
AS490: Topics in Animal Production I AS)	ANSC4000: Topics in Animal Production I	(A,
AS492: Topics in Animal Production II AS)	ANSC4001: Topics in Animal Production II	(A,
B15: Animal Anatomy	BIOL0100: Animal Anatomy	
B40: Plant Pathology	BIOL0101: Plant Pathology	
B41: Plant Physiology	no longer offered	
B43: Entomology	BIOL0200: Entomology	
B46: Weed Science	BIOL0103: Weed Science	
B100: Botany	BIOL1000: Botany	
B110: Zoology	BIOL1001: Zoology	
B200: Cell Biology	BIOL2000: Cell Biology	
B201: Cell Biology Laboratory	BIOL2001:: Cell Biology Laboratory	

B225: Microbiology	MICR2000: Microbiology
B240: Genetics I	GENE2000: Genetics
B260: Plant Physiology	BIOL2002: Plant Physiology
B265: Systematic Botany	BIOL2003: Systematic Botany
B270: Structural Botany	BIOL2004: Structural Botany
B300: Principles of Plant Pathology	BIOL2005: Principles of Plant Pathology (A)
B320: General Entomology	BIOL3000: General Entomology (A)
B330: Ecology	BIOL3001: Ecology
B335: Weed Science	BIOL3002: Weed Science (A)
B340: Comparative Vertebrate Anatomy	BIOL3003: Comparative Vertebrate Anatomy
B355: Food Microbiology	MICR3000: Food Microbiology (A)
B365: Environmental Impact	ENVS3000: Environmental Impact
B370: An Introduction to Molecular Genetics Genetics	GENE3000: An Introduction to Molecular Genetics
B375: Population and Quantitative Genetics Genetics	GENE3001: Population and Quantitative Genetics
B385: Principles of Pest Management	ENVS3004: Principles of Pest Management (A)
B400: Soil Microbiology	MICR4000: Soil Microbiology (A)
B405: Pesticides in Agriculture	ENVS4000: Pesticides in Agriculture (A)
B406: Economic Plant Pathology	ENVS4001: Economic Plant Pathology (A)
B421: Special Topics in Agribiology I	SPEC4001: Special Topics in Agribiology I (A)
B422: Special Topics in Agribiology II	SPEC4002: Special Topics in Agribiology II (A)
B425: Economic Entomology	ENVS4002: Economic Entomology (A)
B435: Conservation Biology	BIOL4002: Conservation Biology
B445: Applied Weed Science	ENVS4003: Applied Weed Science (A)
CS12: Principles of Soil Science	SOIL0100: Principles of Soil Science
CS13: Soil Management	SOIL0200: Soil Management
CS14: Agricultural Chemistry	CHEM0100: Agricultural Chemistry

CS89: Preparatory Chemistry	CHEM0050: Preparatory Chemistry
CS101: General Chemistry I	CHEM1000: General Chemistry I
CS102: General Chemistry II	CHEM1001: General Chemistry II
CS110: Organic Chemistry	no longer offered
CS200: Biochemistry I	no longer offered
CS201: Organic Chemistry I	CHEM2000: Organic Chemistry I
CS202: Organic Chemistry II	CHEM2001: Organic Chemistry II
CS205: Biochemistry II	no longer offered
CS212: Analytical Chemistry I	CHEM2002: Analytical Chemistry I
CS220: Introduction to Soil Science	SOIL2000: Introduction to Soil Science (A)
CS230: Introduction to Geology	GEOL2000: Introduction to Geology
CS275: Food Chemistry I	CHEM2003: Food Chemistry I (A)
CS276: Introductory Food Chemistry	CHEM2004: Introductory Food Chemistry (A)
CS301: Biochemistry	CHEM3000: Biochemistry
CS302: Biochemical Pathways	CHEM3001: Biochemical Pathways
CS310: Radiotracers in Agriculture	CHEM3002: Radiotracers in Agriculture (A)
CS316: Advanced Organic Chemistry	no longer offered
CS318: Advanced Integrated Chemistry Laboratory I	CHEM3003: Advanced Integrated Chemistry Laboratory I
CS320: Soil Fertility	SOIL3000: Soil Fertility (A)
CS341: Instrumental Analytical Chemistry II	CHEM3004: Instrumental Analytical Chemistry II
CS342: Instrumental Analytical Chemistry III	CHEM3005: Instrumental Analytical Chemistry III
CS345: Soil Conservation in Agriculture	SOIL3001: Soil Conservation in Agriculture (A)
CS360: Mammalian Biochemistry	CHEM3006: Mammalian Biochemistry
CS375: Food Chemistry II	CHEM3007: Food Chemistry II (A)
CS376: Intermediate Food Chemistry	CHEM3008: Intermediate Food Chemistry (A)
CS380: Food Quality Assurance	FOOD3000: Food Quality Assurance (A)

CS415: Special Topics in Chemistry and Soil Science I and Soil Science I	(A)	SPEC4003: Special Topics in Chemistry and Soil Science I	
CS425: Special Topics in Chemistry and Soil Science II and Soil Science II	(A)	SPEC4004: Special Topics in Chemistry and Soil Science II	
CS436: Advanced Integrated Chemistry Laboratory II Chemistry Laboratory II		CHEM4000: Advanced Integrated Chemistry Laboratory II	
CS440: Environmental Soil Chemistry		SOIL4000: Environmental Soil Chemistry	
CS457: The Science of Composting & Its Application Its Application	(A)	ENVS4004: The Science of Composting & Its Application	
EB10: Accounting		MGMT0100: Accounting	
EB11: Applied Accounting and Taxation		MGMT0101: Applied Accounting and Taxation	
EB12: Macroeconomics		ECON0101: Introductory Macroeconomics	
EB13: Microeconomics		ECON0100: Introductory Microeconomics	
EB40: Marketing Practices		MGMT0102: Agricultural Marketing	
EB41: Business Law		MGMT0103: Business Law	
EB42: Applied Farm Management		MGMT0200: Applied Farm Management	
EB65: Business Project		MGMT0201: Business Project	
EB72: Farm Project		MGMT0300: Farm Project	
EB90: Technology Project Technology Project		MGMT0302: Economics and Business	
EB95: Practicum - Farming Technology		MGMT0301: Practicum - Farming Technology	
EB110: Agricultural Economics DE		ECON1000: Principles of Microeconomics (A)	
EB200: Microeconomics I		ECON2000: Intermediate Microeconomics	
EB205: Microeconomics II		no longer offered	
EB210: Financial Accounting I		MGMT2004: Financial Accounting I	
EB215: Financial Accounting II		MGMT2005: Financial Accounting II	
EB220: Production Economics		ECON2002: Production Economics	(A)
EB221: Topics in Economics and Business Management		SPEC2000: Topics in Economics and Business Management	(A)

EB225: Introduction to Small Business Entrepreneurship	MGMT1000: Small Business Entrepreneurship
EB230: Introduction to Business Law	MGMT2001: Introduction to Business Law
EB255: Macroeconomics I	ECON1001: Principles of Macroeconomics
EB260: Mathematical Economics	ECON3000: Mathematical Economics
EB300: Environmental and Resource Economic Policy	no longer offered
EB305: Macroeconomics II	ECON2001: Intermediate Macroeconomics
EB315: Management Accounting	MGMT3000: Management Accounting
EB320: Agricultural and Food Policy I	ECON3002: Agricultural and Food Policy (A)
EB325: Operations Research	ECON3003: Mathematical Programming
EB330: Agricultural Markets and Prices	ECON3004: Agricultural Markets and Prices (A)
EB335: Business Marketing	MGMT2002: Marketing
EB340: Farm Management I	MGMT2003: Farm Management (A)
EB360: Econometrics	ECON3005: Econometrics
EB400: Resource and Environmental Economics	no longer offered
EB410: Strategic Management in Agribusiness	MGMT4000: Strategic Management
EB419: Agri-food Policy Analysis	ECON4001: Agri-food Policy Analysis (A)
EB421: Special Topics in Agricultural Economics	SPEC4005: Special Topics in Agricultural Economics
and Business I	and Business I (A)
EB422: Special Topics in Agricultural Economics	SPEC4006: Special Topics in Agricultural Economics and Business II (A)
and Business II	
EB425: Research Methods and Business	RESM4004: Research Methods for Economics (A)
EB430: International Marketing	MGMT3001: International Marketing
EB435: Consumer Behaviour and Food Marketing	MGMT3002: Consumer Behaviour
EB441: Topics in Advanced Farm Management	ECON4002: Topics in Advanced Farm Management (A)
EB445: Agribusiness Entrepreneurship	MGMT4001: Advanced Entrepreneurship (A)

EB450: Project-Seminar Business	RESM4005: Project-Seminar for Economics & Business (A)
ES60: Landscape Plants I	HORT0100: Landscape Plants I
ES61: Landscape Plants II	HORT0101: Landscape Plants II
ES62: Landscape Plants III	HORT0204: Landscape Plants III
ES200: Environmental Studies I	ENVS2000: Environmental Studies I (A)
ES201: Environmental Studies II	ENVS2001: Environmental Studies II (A)
ES202: Basic Composting Skills DE	ENVS1000: Basic Composting Skills (A)
ES312: Environmental Chemistry	CHEM3009: Environmental Chemistry
ES330: Environmental Sampling and Analysis Analysis	ENVS3001: Environmental Sampling and Analysis
ES333: Waste Reduction and Site Remediation Remediation	ENVS3002: Waste Treatment and Site Remediation (A)
ES350: Environmental Studies Field Course	ENVS3003: Environmental Studies Field Course
ES370: Environmental Processes and Natural Landscape Functions	HORT3000: Environmental Processes and Landscape Functions
ES380: Landscape Project Management	HORT3001: Landscape Project Management
ES401: Special Topics in Environmental Studies I Environmental Studies I	SPEC4007: Special Topics in Environmental Studies I (A)
ES402: Special Topics in Environmental Studies II Environmental Studies II	SPEC4008: Special Topics in Environmental Studies II (A)
ES449: Project-Seminar I Seminar I	RESM4006: Environmental Sciences Project-Seminar I (A)
ES450: Project-Seminar II Seminar II	RESM4007: Environmental Sciences Project-Seminar II (A)
ES470: Urban Tree Management	HORT4000: Urban Tree Management
H10: Technical Writing	ENGL0100: Technical Writing
H45: Technical Communications Communication	CMMT0100: Veterinary Practice
H60: Communication Techniques	CMMT0101: Communication Skills
H101: The English and American Novel	ENGL1001: The Novel (H)

H102: Nature in English and American Literature	ENGL1002: Nature in English and American Literature	(H)
H113: Composition	ENGL1000: Composition	(H)
H130: Introductory French	FREN1000: French Language I	(H)
H131: French Language II	FREN1001: French Language II	(H)
H135: Basic Spanish I	SPAN1000: Basic Spanish I	(H)
H136: Basic Spanish II	SPAN1001: Basic Spanish II	(H)
H140: Personnel Management	MGMT2000: Human Resource Management	
H150: Agriculture Today	AGRI1003: Agriculture Today	(A)
H160: Introductory Sociology	SOCI1000: Introductory Sociology	(H)
H170: Introductory Human Geography	GEOG1000: Introductory Human Geography	(H)
H230: Nature's Image: A Survey of Landscape Art	ARTS2000: Nature's Image: A Survey of Landscape Art	(H)
H301: Rural History	HIST3000: Rural History	(H)
H310: Literature of Atlantic Canada	ENGL3000: Literature of Atlantic Canada	(H)
H320: Extension Education in the Rural Community	EXTE3000: Extension Education in the Rural Community	(H)
H321: Leadership Development and the Social Action Process	EXTE3001: Leadership Development and the Social Action Process	(H)
H325: Technology in Agricultural Communications	no longer offered	(H)
H350: Environmental and Agricultural Ethics	PHIL3000: Environmental and Agricultural Ethics	(H)
H360: Rural Sociology	SOCI3000: Rural Sociology	(H)
H370: Rural Geography	GEOG3000: Rural Geography	(H)
H401: Humanities Research Seminar I	no longer offered	(H)
H402: Humanities Research Seminar II	no longer offered	(H)
H403: Special Topics in Humanities	SPEC4009: Special Topics in Rural Studies	(H)

IN100: Agricultural Ecosystems DE	AGRI1000: Agricultural Ecosystems (A)
IN101: Food Security DE	AGRI1001: Food Security (A)
IN202: Transition to Organic Agriculture	AGRI1002 Transition to Organic Agriculture (A) DE
IN205: Food Systems in the Tropics	INTD2000: Food Systems in the Tropics (A)
IN206: Agricultural Systems of Central Europe Europe	INTD2001: Agricultural Systems of Central Europe
IN400: Issues in Agriculture	AGRI4000: Contemporary Issues in Agriculture (A)
MP14: Computational Methods	CSCI0100: Computational Methods
MP70: Basic Statistics	no longer offered
MP85: Functions	MATH0050: Functions
MP90: Introductory Physics	PHYS0050: Introductory Physics
MP100: Calculus and Analytic Geometry I	MATH1000: Calculus and Analytic Geometry I
MP105: Calculus and Analytic Geometry II	MATH1001: Calculus and Analytic Geometry II
MP140: Physics I	PHYS1002: Physics I
MP145: Physics II	PHYS1003: Physics II
MP150: Biophysics I	PHYS1000: Physics for the Life Sciences I
MP210: Introduction to Statistics	STAT2000: Introduction to Statistics
MP211: Introduction to Planned Studies: Surveys and Experiments	STAT3000: Introduction to Planned Studies: Surveys and Experiments
MP212: Probability and Statistics for Engineering Engineering	STAT2001: Probability and Statistics for Engineering
MP220: Computer Science	CSCI2000: Computer Science
MP222: Computer Methods	CSCI1000: Computer Methods
MP230: Multivariable Calculus	MATH2000: Multivariable Calculus
MP236: Differential Equations	MATH2001: Differential Equations
MP250: Biophysics II: Perception	PHYS1001: Physics for the Life Sciences II

MP330: Agrometeorology	AGRI3000: Agrometeorology	
MP335: Applied Linear Algebra	MATH3000: Applied Linear Algebra	
MP336: Data Structures and Numerical Methods	CSCI3000: Data Structures and Numerical Methods	
MP420: Intermediate Statistical Methods	STAT4000: Intermediate Statistical Methods	
MP460: Agricultural Modelling	MATH4000: Agricultural Modelling	
PS35: Utilization of Plant Resources	PLSC0100: Utilization of Plant Resources	
PS38: Nursery Crop Production	HORT0200: Nursery Crop Production	
PS39: Greenhouse Crop Management	HORT0201: Greenhouse Crop Management	
PS43: Small Fruit Crops	HORT0202: Small Fruit Crops	
PS44: Tree Fruit Crops	HORT0203: Tree Fruit Crops	
PS45: Plant Physiology and Stress Management	BIOL0102: Plant Physiology and Stress Management	
PS47: Turfgrass Production and Management	HORT0102: Turfgrass Production and Management	
PS49: Potato Production	AGRN0200: Potato Production	DE
PS50: Landscape Horticulture I	HORT0103: Landscape Horticulture I	
PS51: Residential Landscape Design and Construction	HORT0205: Residential Landscape Design and Construction	
PS52: Cropping Systems I: Cereal-Based Systems	AGRN0201: Cropping Systems I: Cereal-Based Systems	
PS55: Plant Propagation	PLSC0200: Plant Propagation	
PS56: Cropping Systems II: Forage-Based Systems	AGRN0202: Cropping Systems II: Forage-Based Systems	
PS62: Landscape Plant Materials III	no longer offered	
PS70: Landscape Techniques	HORT0206: Landscape Techniques	
PS71: Arboriculture	HORT0207: Arboriculture	
PS72: Landscape Maintenance	HORT0208: Landscape Maintenance	
PS73: Landscape Horticulture II	HORT0209: Landscape Horticulture II	
PS74: Landscape Design and Construction	HORT0210: Landscape Design and Construction	

PS76: Plant Products Physiology	PLSC0203: Plant Products Physiology	
PS90: Technology Project	PLSC0201: Technology Project	
PS99: Plant Science Techniques	PLSC0202: Plant Science Techniques	
PS147: Farm Woodlot Management	PLSC1000: Farm Woodlot Management	
	(A, PDN)	
PS200: Vegetable Production	HORT2000: Vegetable Production	
	(A, PDN) DE	
PS202: Organic Field Crop Management	AGRN1000: Organic Field Crop Management	
	(A, PS) DE	
PS210: Principles of Organic Horticultural Crop Production	HORT2001: Principles of Organic Horticulture	
	(A, PDN) DE	
PS211: Specialty Crops	PLSC2000: Specialty Crops	(PDN)
PS270: Landscape Horticulture Work Program I	HORT2004: Introduction to Viticulture	(PS)
PS280: Introduction to Viticulture Program I	HORT2002: Landscape Horticulture Work Program I	(PS)
PS290: The British Garden	HORT2003: The British Garden	(PS)
PS300: Forage Crops	AGRN3000: Forage Crops	
	(A, PDN)	
PS305: Grain Production	AGRN3001: Grain Production	
	(A, PDN)	
PS315: Tree Fruit Crops	HORT3002: Tree Fruit Crops	
	(A, PDN)	
PS320: Small Fruit Crops	HORT3003: Small Fruit Crops	
	(A, PDN)	
PS325: Potato Production	AGRN3002: Potato Production	
	(A, PDN) DE	
PS330: Greenhouse Crop Production and Floriculture and Floriculture	HORT3004: Greenhouse Crop Production and Floriculture	
	(A, PDN)	

PS335: Landscape Plant Production	HORT3005: Landscape Plant Production (A, PDN)
PS355: Tropical Agriculture	INTD3000: Tropical Agriculture (A, PS)
PS360: Landscape Horticulture Project I	HORT3007: Environmental Horticulture Project I (PS)
PS370: Landscape Horticulture Work Program II	HORT3006: Landscape Horticulture Work Program II (PS)
PS390: Insects and Diseases of Landscape Plants	BIOL3007: Insects and Diseases of Landscape Plants (PS)
PS400: Plant Breeding (PS)	PLSC4000: Plant Breeding (A, PS)
PS405: Agronomy (PS)	AGRN4000: Agronomy (A, PS)
PS410: Horticulture (PS)	HORT4001: Horticulture (A, PS)
PS415: Crop Adaptation (PS)	PLSC4001: Crop Adaptation (A, PS)
PS421: Special Topics in Plant Science I	SPEC4010: Special Topics in Plant Science I (A, PS)
PS422: Special Topics in Plant Science II	SPEC4011: Special Topics in Plant Science II (A, PS)
PS440: Management of Specialized Turf	HORT4002: Management of Specialized Turf (PS)
PS449: Plant Science Project-Seminar I	RESM4008: Plant Science Project-Seminar I (A, PS)
PS450: Plant Science Project-Seminar II	RESM4009: Plant Science Project-Seminar II (A, PS)
PS460: Landscape Horticulture Project II	HORT4004: Environmental Horticulture Project (PS)

Appendix III: NSAC Courses Eligible for Admission to Atlantic Veterinary College
(from 2004/2005 Calendar)

This list was compiled to help applicants choose courses that meet both degree and DVM admissions requirements (Atlantic Veterinary College, PEI). Please note that courses must also meet other prerequisite criteria as listed in the Supplementary Application to AVC, including “Rigor”, “Age of Credits”, “Science Courses”, “Animal Biology Courses”, “Graduate Courses”, and “Repeated Courses”.

Course#	Old Course#	Course Name
Biology		
BIOL1000	B100	Botany
BIOL1001	B110	Zoology
BIOL2001	B201	Cell Biology
BIOL2006	AS230	Mammalian Physiology
BIOL3003	B340	Comparative Vertebrate Anatomy
BIOL3004	AS335	Environmental Physiology
BIOL3005	AS380	Physiology of Aquatic Animals
BIOL3008	AS330	Growth, Reproduction & Lactation
BIOL4000	AS460	Avian Biology
BIOL4001	AS470	Animal Cell Culture
GENE2000	B240	Genetics I
GENE3000	B370	An Introduction to Molecular Genetics
GENE3001	B375	Population & Quantitative Genetics
GENE4000	AS465	Molecular Applications to Animal Production
MICR2000	B225	Microbiology
MICR3000	B355	Food Microbiology
MICR4000	B400	Soil Microbiology

Microbiology

MICR2000	B225	Microbiology
MICR3000	B355	Food Microbiology
MICR4000	B400	Soil Microbiology

Genetics

GENE2000	B240	Genetics I
GENE3000	B370	An Introduction to Molecular Genetics
GENE3001	B375	Population & Quantitative Genetics
GENE4000	AS465	Molecular Application to Animal Production

Chemistry

CHEM1000	CS101	General Chemistry I
CHEM1001	CS102	General Chemistry II
CHEM2000	CS201	Organic Chemistry I
CHEM2002	CS212	Analytical Chemistry I
CHEM2003	CS275	Food Chemistry I
CHEM2005	CS200	Biochemistry I
CHEM3000	CS301	Biochemistry
CHEM3001	CS302	Biochemical Pathways
CHEM3004	CS341	Instrumental Analytical Chem II
CHEM3005	CS342	Instrumental Analytical Chem III
CHEM3007	CS375	Food Chemistry II

Organic Chemistry

CHEM2000	CS201	Organic Chemistry I
CHEM2003	CS275	Food Chemistry I
CHEM3007	CS375	Food Chemistry II

Humanities/Soc Science

AGRI1001	IN101	Food Security
AGRI1003	H150	Agriculture Today
ARTS2000	H230	Natures Image: A Survey of Landscape Art
CMMT3000		Communication Theory & Skills
ECON1000	EB110	Principles of Microeconomics
ECON1001	EB255	Principles of Macroeconomics
ECON2000	EB200	Intermediate Microeconomics
ECON2001	EB305	Intermediate Macroeconomics
ECON2002	EB220	Production Economics
ECON3001		Environmental Economics
ECON3002	EB320	Agricultural & Food Policy
ECON4000		Advanced Microeconomics
ECON4001	EB419	Agri-food Policy Analysis
ECON4003		Resource Economics
ENGL1000	H113	Composition
ENGL1001	H101	The Novel
ENGL1002	H102	Nature in English & American Literature
ENGL3000	H310	Literature of Atlantic Canada
EXTE3001	H321	Leadership Development & Social Action Process
FREN1000	H130	French Language I
FREN1001	H131	French Language II
GEOG1000		Intro Human Geography
GEOG3000	H370	Rural Geography
HIST1000		Introduction to Canadian History I
HIST1001		Introduction to Canadian History II
HIST3000	H301	Rural History

PHIL3000		Environmental & Agricultural Ethics
POLS1000		Intro to Political Science
POLS1001		Structure & Function of Government
SOCI1000	H160	Introductory Sociology
SOCI1001		Introductory Sociology II
SOCI3000	H360	Rural Sociology
SPAN1000	H135	Basic Spanish I
SPAN1001	H136	Basic Spanish II

Physics

ENGN1002	AE110	Statics
ENGN2005	AE230	Dynamics
ENGN3000	AE300	Electric Circuits
ENGN3002	AE310	Thermodynamics
ENGN3011	AE350	Fluid Mechanics
PHYS1000	MP150	Physics for Life Sciences I
PHYS1001	MP250	Physics for Life Sciences II
PHYS1002	MP140	Physics I
PHYS1003	MP145	Physics II

Math

ECON3000	EB260	Mathematical Economics
ECON3005	EB360	Econometrics
MATH1000	MP100	Calculus & Analytical Geometry I
MATH1001	MP105	Calculus & Analytical Geometry II
MATH2000	MP230	Multivariable Calculus
MATH2001	MP236	Differential Equations

MATH3000	MP335	Applied Linear Algebra
MATH4000	MP460	Agricultural Modelling
STAT2000	MP210	Introduction to Statistics
STAT2001	MP212	Probability & Statistics for Engineering
STAT3000	MP211	Introduction to Planned Studies: Surveys & Experiments
STAT4000	MP420	Intermediate Statistical Methods

Statistics

ECON3005	EB360	Econometrics
STAT2000	MP210	Introduction to Statistics
STAT3000	MP211	Introduction to Planned Studies: Surveys & Experiments
STAT4000	MP420	Intermediate Statistical Methods

English Composition

ENGL1000	H113	Composition
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English

CMMT3000		Communication Theory & Skills
ENGL1000	H113	Composition
ENGL1001	H101	The Novel
ENGL1002	H102	Nature in English & American Literature
ENGL3000	H310	Literature of Atlantic Canada